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# C U R I O U S O B S E R V A T I O N S

U P O N T H E  
M A N N E R S, C U S T O M S, U S A G E S, D i f f e r e n t  
L A N G U A G E S, G O V E R N M E N T, M Y T H O -  
L O G Y, C H R O N O L O G Y, A n t i e n t a n d M o d e r n  
G E O G R A P H Y, C E R E M O N I E S, R E L I G I O N,  
M E C H A N I C S, A S T R O N O M Y, M E D I C I N E,  
P H Y S I C S, N a t u r a l H I S T O R Y, C O M M E R C E,  
A R T S a n d S C I E N C E S,

O F T H E  
S E V E R A L N A T I O N S  
O F  
A S I A, A F R I C A, a n d A M E R I C A.

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Translated from the FRENCH of  
M. *L'ABBÉ LAMBERT.*

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V O L. I.

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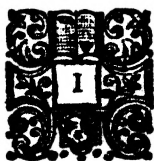
CURIOUS  
OBSERVATIONS  
ON THE  
Manners, Customs, &c.

Of the several NATIONS of  
*Asia, Africa, and America.*

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CHAP. I.

*Of the fishing for the xanxus and pearls,  
and of the trade which the Dutch carry  
on with them.*



It is precisely at cape Comarin †, that the coast so famous for the pearl fishery begins. It forms a kind of bay, which extends upwards of forty leagues, from cape Comarin, to the point of Romanacor, where the island of Ceylan is almost united to the mainland by a chain of rocks, which some Europeans call Adam's bridge.

VOL. I.

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The

† In the occidental Peninsula of the *Indies*.

The natives of the place say, that this bridge was built by the apes of former times. They are foolishly persuaded, that these animals being more brave and industrious than the modern apes, made a passage from the main-land into the island of Ceylan, that they rendered themselves masters of this island, and rescued the wife of one of their gods, who had been carried off. It is certain, that in this place, the sea at her greatest height is not above four or five feet deep, so that only sloops or flat vessels can pass between the intervals of these rocks. The whole coast of the fishery is inaccessible to European vessels, on account of the terrible raging of the sea, and ships can only pass the winter at Tutucurin, that harbour being covered by two islands, which are its greatest security.

Since the power of the Dutch has decayed in the Indies, we only find on the coast of the fishery miserable and wretched towns; the principal of which are Tala, Manapar, Alandaley, and Pendi-cael. We must however except Tutucurin, which contains fifty thousand inhabitants, some of whom are Christians, and some Pagans.

To persons at sea Tutucurin appears a very beautiful city. We see pretty high buildings on the two islands which cover it. A small fortress which the Dutch built some years ago to defend themselves from the attacks of the Pagans who came from the main-land, and several large magazines built on the brink of the sea, make a very grand and beautiful appearance: but as soon as we come on shore, all this beauty disappears, and we find only a homely village almost intirely built with turf. The Dutch draw considerable revenues from Tutucurin, tho' they are not absolute masters of it. The whole coast of the fishery belongs partly to the king of Madura, and partly to the prince of Marava.

With respect to the commerce of the Dutch on this coast ; besides the stuffs brought to them from Madura, which they exchange for the leather of Japan, and the spiceries of the Moluccas, they draw a considerable profit from two kinds of fisheries, that of pearls and of xanxuses.

The xanxuses are large shells resembling those with which we generally paint Tritons. 'Tis incredible how jealous the Dutch are of this trade ; it would cost an Indian his life who should venture to sell a xanxus to any but the Dutch company. The members of this company buy them at a very low price, and send them to Bengal, where they sell them very dear. They saw these shells according to their breadth ; as they are round and hollow, when they are saw'd they make bracelets of them, which have as much lustre as the finest ivory ; those which are catch'd on this coast in large quantities, have all their volutes from right to left, and if there should be one found whose volutes were from left to right, the natives would account it a treasure worth a million of money, because they imagine, that it was in a xanxus of this kind that one of their kings concealed himself, to avoid the fury of his enemies, who pursued him by sea.

The fishery of pearls also enriches the Dutch company in another manner. The pearls are not fished for on the company's account, but they permit every inhabitant of the country, whether Pagan, Mahometan, or Christian, to have as many boats for that purpose as they think proper ; and every boat pays to them sixty crowns, and sometimes more. This tax raises a considerable sum, since we sometimes see six or seven hundred boats employed in this fishery.

The company does not permit every one to go in quest of his pearls where he pleases, but marks

out a particular place for that purpose. Formerly the Dutch in the month of January appointed the place and the time for the fishery for that year, without making a previous tryal of it; but as it often happened that the season or the place marked were not favourable, and as oysters were wanting, which proved a considerable prejudice to those who had made great preparations, they have now changed this custom, and observe the following method.

In the beginning of the year, the company send ten or twelve boats to the place where they intend the fishery should be. These boats separate into different parts; each of the divers catches a thousand oysters, which they bring ashore; they open each thousand separately, and lay the pearls they take from it by themselves. If the value of those found in a thousand amounts to a crown or more, it is a sign that the fishery will be very rich and copious in that place: but if the pearls they take from a thousand are only worth half a crown, there is no fishery that year, because the profits would not defray the expences.

When the tryal has succeeded, and it is declared that there will be a fishery; at the appointed time there appears on the coast from all quarters a prodigious number of boats and people, with merchandize of all kinds. The Dutch commissaries come from Colombo, the capital of the island of Ceylan, to preside over the fishery. The day it begins it is opened early in the morning by the discharge of a cannon. Upon this all the boats set out, preceded by two large Dutch sloops, which anchor one upon the right, and the other on the left, in order to mark the place for the fishery. Then the divers of each boat plunge three, four, or five fathoms deep. Each boat has several divers, who go into the water by turns; as soon as one returns another plunges. They are tied to a rope, whose end  
is

is so fixed to the stern of the boat, that the sailors can by means of a pulley easily slacken or draw it, according as occasion requires. The diver has a large stone tied to his feet, to make him sink the sooner, and a bag about his waist to hold the oysters. As soon as he is at the bottom he quickly gathers all within his reach, and puts them into his bag. When he finds more than he can carry off, he lays them in a heap, and returning to take breath, he either dives again or sends one of his companions to bring them up. In order to return to the air, he has nothing to do but strongly to pull a small rope, different from that which is fixed to his body. A sailor who is in the boat and holds the other end of the rope, forthwith gives the signal to the others, who immediately draw the diver up, who to come up the more speedily, looses if he can, the stone which was tied to his feet. The boats are not at so great a distance, but that the divers frequently beat one another under water, for having taken away the heaps of oysters they had gathered.

One of the divers perceiving that his companion had robbed him several times successively of what he had been at great pains to gather, judged it expedient to put a stop to it for the future. He pardoned him the first and second time, but seeing that he continued to pilage him, he let his neighbour dive first, and following him immediately with a knife in his hand, he murder'd him under water, which was not perceived till the body was drawn up without life and motion. This is not the only thing to be dreaded in this fishery ; for there are in those seas sharks so strong and large, that they often carry off and devour the diver and his oysters.



As for the oil which the divers put into their mouths, or the glass bell in which they include themselves, to enable them to dive, these are falsehoods advanced by persons who have been ill informed. As the people of that coast are from their infancy accustomed to diving, and to retain their breath, they become dexterous at it, and are paid according to their dexterity: but notwithstanding this, the business is so fatiguing, that they can only plunge seven or eight times a day. Some of them are so much transported with ardour to gather more oysters than their neighbours, that they lose respiration and presence of mind so much, that not thinking to make the signal, they are soon suffocated, if the sailors in the boat do not draw them up, when they stay too long. This exercise is continued till noon, when all the boats come to the shore.

When the boats land, the master orders all the oysters belonging to him to be carried into a kind of yard or area, where he leaves them two or three days, that they may open, and easily suffer the pearls to be extracted. When they are taken out and well wash'd, they have five or six small copper basons pierc'd like a sieve, which go into each other in such a manner that there remains some space between the uppermost and the undermost. The holes of each bason are of different diameters. These of the second are less than those of the first, and those of the third less than those of the second, and so of the others. They throw the pearls, both great and small, after they are well washed, into the first bason, and such of them as do not pass thro' this are thought to be of the first order. Those which remain in the second bason are of the second order, and so on to the last, which not being pierced receives the seeds

seeds of the pearls. These different orders of pearls generally determine their price, unless the figure or water augment or diminish their value. The Dutch always reserve to themselves the right of purchasing the largest; yet if the person to whom they belong, will not sell them for the price they offer, they do him no violence, and he may dispose of them to whom he pleases. All the pearls caught the first day belong either to the king of Madura or to the prince of Marava, according to the situation of the coast where the fishery is carried on. The Dutch have not the fishing of the second day, as has been reported by some; but they have a sufficient number of other ways to enrich themselves by the pearl trade. The surest and shortest method is to have ready money; for if people pay upon the spot, they have great bargains upon those coasts.

But if the pearl fishery produces great riches, it also brings on terrible diseases, either on account of the prodigious confluence of people from all parts, who live so poorly that many of them eat only oysters, which are of a difficult digestion, and a malignant quality; or lastly, on account of the infection of the air; for the oysters being exposed to the heat of the sun, are corrupted in a few days, and exhale a stench, which alone may produce contagious distempers.

Very beautiful pearls are also found in Colo and Mindano, which are two of the Philippine islands. The divers, before they plunge, have a custom of rubbing their eyes with the blood of a white cock. But it is in the Persian gulph, in the isle of Baharens, and on the coast of Califa in Arabia Felix, that the most considerable pearl fishery is carried on. Here the fishing

happens twice a year, the first in the month of March and April, and the second in those of August and September. The Banians and Moors generally purchase the greatest part of these pearls, which they buy cheap and sell very dear in Persia.

The coast of California, particularly from the cape of St. Lucar to the White cape, the coast of Peru, and that of Panama, also produce large pearls. But these have not the water of the oriental pearls, and are of a blackish and leaden colour, which proceeds from the bad bottom in which they are formed, and which is sometimes only one or two fathoms deep.

As to the opinion of the ancients, that pearls were formed of the dew which falls from heaven, and that there was only one pearl in every oyster, nothing is more opposite to truth, since we see that they are immoveable in a bottom often ten fathoms deep, where the dew cannot penetrate; and since we sometimes find seven or eight pearls of different sizes in one oyster. They are ingendered, if I may so speak, in the same manner with the eggs in a hen, the largest advancing always towards the orifice, while the the smallest remain at the bottom, in order to be compleatly formed. Thus the largest pearl comes first; and the smaller ones remain at the bottom of the shell, till they arrive at their natural bulk. All oysters however do not include pearls, since it is certain that a great many contain none at all.

## C H A P. II.

*Of the knowledge which the Indians have had  
of the true religion.*

**B**Y reading the ancient books of the Indians we may easily be convinced, that they drew their religion from the books of Moses and the Prophets. In a word, all the fables of which their books are full, do not so far cloud and darken the truth, but that it may be known. Besides, the religion of the Hebrews, of which the Indians owe their knowledge partly to their trade with the Jews and Egyptians, we may discover among them very remarkable traces of the Christian religion, which was preached to them by the apostle Thomas, by Pantænus, and several other great men in the primitive ages of the church.

It is certain that the commonalty of the Indians by no means fall into the absurdities of atheism. They have pretty just ideas of the Deity, tho' altered and corrupted by the worship of idols. They acknowledge an infinitely perfect God, who exists from all eternity, and is possessed of the most excellent attributes: so far, nothing is more beautiful and conformable to the sentiments of Christians concerning the Deity; but idolatry has superadded the following extravagancies.

Most of the Indians affirm, that the great number of gods whom they now adore are only subordinate deities, subjected to the sovereign Being, who is equally lord over gods and men. This great God, say they, is infinitely exalted above all beings; and this infinite distance hinders him from having any commerce with weak creatures. What proportion, continue they, is there between an infinitely

finitely perfect being, and beings created full of imperfections and weaknesses. 'Tis for this reason, according to them, that Parabaravaftou, that is, the supreme God, called Bruma, Vichnou, and Routren, to the first he has given the power of creating, to the second the power of preserving, and to the third the power of destroying.

But these gods adored by the Indians, are in the opinion of their learned men, the sons of a woman whom they call Parrachatti; that is, the supreme Power. If we reduce this fable to what it was in its origin, we shall easily discover the truth, tho' darkened by the ridiculous ideas which the spirit of error has added to it.

The first Indians would only say, that all things which happened in the world, either by creation, which they ascribe to Bruma; by preservation, which is the office of Vichnou; or by the different changes and revolutions, which are the work of Routren, proceed solely from the absolute power of Parabaravaftou, or the supreme God. They afterwards made a woman of their Parrachatti, and have ascribed to her three children, which are only the principal effects of omnipotence. In a word, Chatti in the Indian language signifies power, and Para supreme or absolute.

This idea which the Indians have of a Being infinitely superior to the other deities, at least denotes that their ancestors in reality adored only one God, and that polytheism was only introduced among them, in the manner in which it spread thro' all the idolatrous countries.

This first knowledge of a God, does not indeed evidently prove the commerce of the Indians with the Egyptians or the Jews: for it is a fundamental truth engraved on the minds of all men, and is never altered, except by the irregularity and corruption of the heart.

The

The Indians explain the resemblance of man with God in this manner : “ Imagine to yourself, says  
“ one of their most celebrated authors, a million  
“ of large vessels full of water, on which the sun  
“ diffuses his rays. This fine star, tho’ one, is  
“ multiplied and represented in a moment in each  
“ of these vessels. We every where see an exact  
“ resemblance of the sun. Our bodies are these  
“ vessels full of water, the sun is the figure of the  
“ supreme Being, and the image of the sun painted  
“ in each of these vessels, naturally enough represents  
“ our souls created after the image of God.”

It was Bruma, say the Indians, who created the first man, and formed him of the dust of the earth, as yet quite new and recent. He had indeed some difficulty to finish his work, neither did his measures succeed till he made the third attempt. Fable has added this last circumstance to truth, and it is not surprising that a god of the second order should require an apprenticeship to create man in the just and beautiful proportion of all his parts. This is not all ; Bruma the new creator had no sooner formed his creature, than he was so much the more charmed, as it had cost him more pains to perfect it. The next thing to be done is to place this creature in a habitation suitable to its worth and dignity.

The scripture is very magnificent in the description it gives us of the terrestrial paradise. The Indians have been willing to imitate it in the representations they give us of their Chorcum, which according to them is a garden of pleasures, where all species of fruits are found in great abundance. We there see a tree, whose fruit, according to them, would communicate immortality, if it were lawful to eat of it. It would have been very strange, if people who had never heard of the terrestrial paradise,

dise, should without knowing it, give so similar a description.

What is marvellous in the system of the Indian doctors is, that the inferior gods, who from the creation of the world are multiplied to an infinite number, had not, or at least were not sure of having the privilege of immortality, which however they must have wish'd for. With respect to this subject, the Indians relate the following story, which however fabulous, has certainly no other origin than the doctrine of the Hebrews, and perhaps that of the Christians.

The gods, say the Indians, try'd all ways to arrive at immortality. After trying various ways they thought proper to have recourse to the tree of life, which was in the Chorcarn. This means succeeded, and by eating now and then of the fruit of this tree, they preserve to themselves a treasure, which it is so much their interest not to lose. A famous serpent called Chiven, perceived that the tree of life had been discovered by the gods of the second order. As probably the care of this tree had been entrusted to the serpent, he conceived so great a rage at the discovery, that he forthwith diffus'd so large a quantity of poison, that all the earth was infected by it, and no man escaped. But the god Chiven took pity upon human nature, appeared in the form of man, and cheerfully swallowed all the poison with which the malicious serpent had infected the whole world.

In the following fable, we may easily trace the history of the deluge. The god Routren, who is the great destroyer of created beings, one day formed a resolution to drown all men, with whom he pretended to have reasons to be dissatisfied. His design could not be so secret, but that it was foreseen by Vichnou, the preserver of creatures. His power did not extend so far as to suspend the execution

cution of Routren's project ; but his quality of preserver of the creatures gave him a right to hinder, if possible, the most pernicious effects of it, which he did in the following manner.

He one day appeared to Sattiavarti his great confidant, and told him in secret, that there would very soon be an universal deluge, that the earth would be covered with water ; and that by this means Routren intended no less than the total destruction of men and animals. He assured him at the same time, that he had nothing to dread, and that in spite of Routren he would take care to preserve and protect him, in order to repeople the earth.

His design was to make a wonderful bark appear, the moment when Routren least expected it, and to include in it sufficient provision for about eight hundred and forty millions of souls and seeds of beings. It was also necessary that at the time the deluge began, Sattiavarti should be on the summit of a very high mountain, which he carefully pointed out to him. Some time after Sattiavarti, as had been predicted to him, perceived an infinite number of clouds assembled. He with tranquillity saw the storm formed over the heads of guilty mortals. The most terrible rain that ever was seen fell from the heavens. The rivers were enlarged so as to cover the surface of the whole earth. The sea overflowed her banks, and mixing with the rivers, soon covered the highest mountains, so that trees, animals, men, cities, and kingdoms were overwhelmed. All animated beings perished, and were destroyed.

In the mean time Sattiavarti, with some of his virtuous friends, had betaken themselves to the appointed mountain. He there waited for the assistance the god had promised him ; and for some moments was not free from apprehensions: The waters,



ters, which always assumed new force, and gradually approached to him, now and then gave him terrible alarms: but at the instant when he thought to be lost, he saw the bark appear which was to save him. He forthwith went into it with the virtuous persons who accompanied him. This vessel contained eight hundred and forty millions of souls, and the seeds of beings.

The difficulty was to manage the bark, and support her against the impetuosity of the billows, which were in a furious agitation. The god Vichnou took care of this; for he forthwith became a fish, and made use of his tail as a helm to direct the ship. The god-fish was so skilful a pilot, that Sattiavarti remained in his asylum in great repose, till the waters retired from the face of the earth.

In this recital mix'd with fables, and the most whimsical conceits, who does not perceive what the scripture teaches us concerning the deluge, the ark, and the preservation of Noah, and his family.

The Indians have not stopt here, since after describing Noah under the name of Sattiavarti, they have applied to Brama the most singular adventures of the history of Abraham. The following incidents seem to confirm this.

The conformity of the names seems at first to support my conjectures; for there is but little difference between Brama and Abraham. This Brama, whose name is so like to that of Abraham, was married to a woman whom all the Indians call Sarasvadi. The two last syllables of this word are, in the Indian language, an honourable appellation; thus Vadi is equivalent to our word Madam. This termination is found in several names of distinguished women; as for example, in that of Parvadi the wife of Routren. It is therefore evident, that the two first syllables of the words Sarasvadi, which are properly the whole name of Brama's wife,

wife, are reduced to Sara, which is that of Abraham's wife.

There is, however, something still more singular. Brama among the Indians, as Abraham among the Jews, was head or chief of many tribes, and the number of tribes is exactly alike. At Tiche-rapali, where is now the most famous temple in the Indies, they yearly celebrate a festival, in which there is a venerable old man with twelve children before him, who represent, say the Indians, the twelve chiefs of the principal tribes. 'Tis true, some of their doctors think, that in the ceremony this old man represents Vichnou : but this is not the opinion of the literati, nor of the people, who generally say that Brama is the chief of all the tribes.

The Indians honour the memory of one of their saints, who like the patriarch Abraham, thought it his duty to sacrifice his son to one of the gods of the country. This god demanded this victim of him, but accepting of the will of the father, did not suffer him to proceed to the execution of his purpose ; some of them, however, say, that the child was slain, but that the god raised him from the dead.

We find a very surprizing custom in one of the Indian tribes, which is called the tribe of robbers ; not that there is an intire tribe of robbers, nor that all who follow this trade are assembled into a particular body, and have a privilege to rob exclusive of all others : the meaning is only, that all the Indians of this tribe rob with great liberty ; but unfortunately they are not the only persons who ought to be distrusted.

Now, in this tribe of robbers they observe the ceremony of circumcision : But it is not performed in infancy, but on persons about twenty years of age ; neither are all subject to it, since only the principal men of the tribe submit to it. This custom

tom is very ancient, and it is very difficult to discover whence it arose amidst an intirely idolatrous people.

From the history of Noah and Abraham, let us proceed to that of Moses.

Nothing seems more to resemble Moses than the Vichnou of the Indians transform'd into Chrichnen, which in the Indian language signifies black. This is to intimate that Chrichnen came from a country whose inhabitants are of this colour. The Indians add, that one of the nearest relations of Chrichnen was in his infancy expos'd in a small cradle, on a large river, where he was in great danger of being drown'd. He was taken up, and as he was a very beautiful child, he was brought to a great princess, who took the charge of his maintenance and education.

What could possibly induce them to apply this event to one of Chrichnen's relations rather than to himself? Of this we are ignorant. It was not Chrichnen then, but one of his relations, who was brought up at the court of a certain great princess. In this the comparison with Moses is defective; but what follows in some measure recompenses this defect.

As soon as Chrichnen was born, he was also exposed on a great river to screen him from the wrath of the king, who waited for the moment of his birth, in order to kill him. The river out of respect divided itself, and would not disturb so precious a treasure. The infant was taken from this dangerous place, and brought up among shepherds. He afterwards married with the daughters of these shepherds, and for a long time kept their flocks. He soon distinguished himself among his companions, who chose him for their chief. He then performed wonderful things for the flocks and those who kept them. He killed the king who had declared

clared a cruel war against them. He was pursued by his enemies, and as he was not in a condition to resist, he retired to the sea, which opened a road for him, and swallowed up those who pursued him. By this means he escaped from the torments prepared for him.

Is it after this possible to doubt that the ancient Indians have known Moses under the name of Vichnou, transformed into Chrichnen? But to a knowledge of this famous conductor of the people of God, they have joined that of several customs which he has described in his books, and several laws which he has published, and which were observed after his death.

Among these customs which the Indians only could have drawn from the Jews, and which are still preserved in their country, we may reckon the frequent bathings and purifications, the extreme horror of dead carcases, by the touch of which they think themselves polluted; the different order and distinction of the tribes, and the inviolable law which forbids them to marry out of their own tribes. But let us continue our parallel.

The Indians make a sacrifice which they call Ikiam, which is the most celebrated of all those made in the Indies: in it they sacrifice a sheep, and repeat a kind of prayer, in which with a loud voice they pronounce these words, "When shall the saviour be born, when shall the redeemer appear?"

Does not this sacrifice of a sheep seem to bear a near resemblance to that of the paschal lamb; for it is to be observed, that as the Jews were all obliged to eat their share of the victim, so the Bramins, tho' they dare not eat flesh, are nevertheless dispensed from their abstinence at the sacrifice of the Ikiam, and are obliged to eat of the sheep

which they sacrifice, and distribute among the  
 ft.

Many Indians adore the fire, and even their gods have offered victims to that element. There is a particular precept for the sacrifice of Oman, by which it is ordered that the fire should always be preserved, and never suffered to go out. He who assists at the Ikiam is every morning and evening to put wood upon the fire, in order to keep it in. This scrupulous care corresponds to the command given in the book of Leviticus, “\*And “ the fire upon the altar shall be burning in it, it “ shall not be put out, and the priest shall put “ wood on it every morning.” The Indians have done something more in consideration of fire; for they precipitate themselves into the midst of the flames.

They have also a very high idea of serpents, since they believe that these animals have something divine in them, and that the sight of them is lucky. Thus many of them adore serpents, and pay them the most profound homage: but so little gratitude have these animals, that they cruelly bite their adorers. If the brazen serpent which Moses shewed the people of God, and which cur’d by being seen, had been as cruel as the live serpents of the Indians, I fancy the Jews would never have been tempted to adore it.

We must not forget the charity of the Indians to their slaves, whom they treat almost like their own children. They take care to bring them well up, and provide liberally for them. They marry them, and almost always give them their liberty. Does it not seem that the precepts in the book of Leviticus were by Moses addressed to the Indians, as well as to the Israelites?

What

What appearance is there that the Indians had not formerly some acquaintance with the law of Moses? What they say concerning their law, and of Brama their legislator, seems evidently to destroy all doubts of this kind.

Brama has given a law to man. This Vedam, or book of the law, the Indians look upon as infallible. It is, according to them, the pure word of God, declared by Abadam, that is, by him who cannot be deceived, and who is essentially truth. The Vedam, or law of the Indians, is divided into four parts. But in the opinion of several learned Indians, there was anciently a fifth, which has perished by the injury of time, and which it has been impossible to recover.

The Indians have an inconceivable esteem for the law which they have received from their Brama. The profound respect with which they hear it read, the choice of proper persons for this purpose, the preparations for it, and a hundred similar circumstances, are perfectly conformable to what we know of the Jews with respect to the holy law, and Moses who promulged it to them.

But this respect of the Indians for their law proceeds so far, that they want to keep it an impenetrable mystery from Christians: but yet we know the following particulars concerning it. The first part of the Vedam, which they call Irroucouredam, treats of the first cause, and the manner in which the world was created. They say that in the beginning there was nothing but God and water; and that God moved upon the water. Does not this, in some measure, resemble the first chapter of Genesis?

In the third book, which they call Samavedam, there are a great many moral precepts, which have a great analogy with the moral precepts dispers'd thro' Genesis.

The fourth book, which they call *Adavarravedam*, contains the different sacrifices to be offered, the qualities requisite to the victims, the manner of building the temples, and the different festivals to be celebrated, all which are so many plans taken from the books of Leviticus and Deuteronomy.

To render the parallel perfect. As it was upon the famous mount Sinai that Moses received the law, so it was upon the celebrated mountain of Mahamerou, that Brama was found with the *Vedam* of the Indians. This mountain of the Indies, is the same with that which the Greeks have called Meros, where they say Bacchus was born, and where the seats of the gods were. The Indians to this day affirm, that in this mountain the Chorchams or different paradises are situated.

We have seen what the Indians think of Moses and the law. Let us hear what they say of Mary the sister of that great prophet. The scripture tells us of her, that after the miraculous passage thro' the Red-Sea, she assembled the Israelitish women, provided musical instruments, and with her companions began to dance, and sing the praises of the most high. A passage very like this, is by the Indians told of their famous Lakeoumi. This woman was, as well as the sister of Moses, delivered out of the sea, by a kind of miracle, and had no sooner escaped than she made a magnificent entertainment, in which all the gods and goddesses danced to the sound of instruments.

The Indians also tell another story of Arichandiren. This was a very ancient king of the Indies, and excepting the name, and some circumstances, is the Job of the scriptures.

The gods one day met in their Chorcham, or paradise of pleasures. Devendiren the god of glory presided in their illustrious assembly. A croud of  
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gods and goddesſes were preſent. The famous ſaints had alſo their place there, eſpecially the ſeven principal hermits.

After ſome indifferent diſcourſe, the queſtion was propoſed, Whether among men there was a perfect prince. Almoſt all of them maintained that there was not one who was not ſubject to very great vices; Vichouvamoutren put himſelf at the head of this party: but the famous Vachichten was of a contrary opinion; and maintained that king Arichandiren his diſciple was a perfect prince.

Vichouvamoutren being of an imperious temper, and impatient of contradiction, flew into a violent paſſion, and aſſured the gods that he would ſhew them the defects of that prince, if they would abandon him to his management.

The challenge was accepted by Vachichten, and it was agreed, that he who ſhould be conquered ſhould yield to the other, all the merit he had acquired by a long penance. Poor king Arichandiren was the victim of this diſpute. Vichouvamoutren put him to all kinds of tryals. He reduced him to extreme poverty, and ſtriped him of his kingdom. He kill'd his only ſon, and even carried off his wife Chandirandi.

Notwithſtanding ſo many calamities, the prince ſtill perſiſted in the practice of virtue, with an evenneſs of ſoul, of which the gods who tried him ſo ſeverely, would not have been capable; but they rewarded him with great magnificence for it: they embraced him one after another; and the very goddeſſes paid their compliments to him. They reſtored his wife, and raiſed his ſon from the dead. Thus Vichouvamoutren, according to agreement, yielded all his merit to Vachichten, who made a preſent of it to king Arichandiren; and he who was conquered went, with regret, to begin a long



penance, to get, if possible, a fresh stock of virtue.

The Indians tell another story which comes very near to that of Sampson. They say that their god Ramen one day attempted to conquer Ceylan, and god as he was, could only think of the following stratagem to carry on his design. He levied an army of apes, and for a general gave them a distinguished ape whom they called Anouman. He ordered the general's tail to be covered with several pieces of stuff, on which large quantities of oil were poured. To this stuff he set fire, and the ape running thro' the corn, the towns and the villages, burnt every thing that came in his way, so that almost the whole island was reduced to ashes. After such an expedition, the conquest of it could not be difficult; and it was not necessary to be a god of great power in order to accomplish his ends.

Such is the knowledge the Indians have had of the religion of the Hebrews: and it is no less true, that they have had a knowledge of the Christian religion, from the primitive times of the church. It cannot be denied but that they still preserve a confused idea of the adorable Trinity: their three principal gods are Bruma, Vichnou, and Routren. Most of the Indians indeed affirm, that these are three different and really separate deities. But many Maniqueuls or spiritual men, assert that these three gods, apparently separate, are in reality but one god, who is called Bruma, when he creates and exerts his omnipotence; Vichnou, when he preserves the beings created, and dispenses proofs of his bounty; and Routren, when he destroys cities, chastises the guilty, and makes the effects of his just wrath to be felt. We must, say some Indian doctors, represent to ourselves God and his three names, which correspond to his three principal attributes, nearly under the

the idea of those triangular pyramids, erected before the entries of some churches.

All the Indians grant that God has been several times incarnated ; and almost the whole race ascribe these incarnations to Vichnou, the second god in their trinity ; and this god, according to them, was never incarnated, except in quality of saviour and deliverer of men.

With respect to sacraments, the Indians say, that bathings in certain rivers intirely efface sins, and that this mysterious water not only washes the body, but also purifies the soul in an admirable manner. The remains of the sacrifices, and the rice distributed to be eaten in the temples, are called by the Indians *Parajadam*, which in our language signifies Divine Grace, the meaning of the Greek word *Eucharist*.

It is a kind of maxim among the Indians, that he who shall confess his sin, shall receive a pardon. They celebrate a festival every year, during which they go to confess upon the borders of a river, that their sins may be entirely effaced. In the famous sacrifice called *Ikiam*, the wife of him who presides is obliged to confess, and descend to a detail of her most humbling vices, and even to declare the number of her sins. The Indians with respect to this subject relate the following fable.

When Chrichnen was in the world, the famous Draupadi was married to five celebrated brothers, all kings of Madura. One of these princes one day shot an arrow at a tree, and struck an admirable fruit from it. The tree belonged to a celebrated saint, and had this quality, that every month it bore fruit, which gave so much strength to him who eat it, that for the whole of the month that single repast was sufficient for him : but as in these remote ages, people were more afraid of the malediction of the saints than of the gods, the five

brothers were afraid lest the hermit should curse them; for which reasons they prayed to Chrichnen to assist them in so delicate an affair. The god Vichnou transformed into Chrichnen told them, as well as Draupadi, who was present, that he saw no other means of repairing so great an evil, than the making an entire confession of all the sins of their lives; that the tree whose fruit had fallen was six cubits high; that in proportion as each of them confessed, the fruit would be elevated in the air to the height of a cubit; and that at the end of the last confession, it would be fixed to the tree as it was before.

The remedy was bitter, but it was necessary either to take it, or expose themselves to the malediction of the saint. The five brothers consented to declare all. The difficulty was to engage the woman to do the same. After it became necessary to speak of her faults, she felt only an inclination for secrecy and silence. However, by representing to her the fatal effects of the malediction of the saint, they made her promise what they had a mind.

After this assurance, the eldest of the princes began this troublesome ceremony, and made a very exact confession of his whole life. In proportion as he spoke the fruit ascended of itself, and was only elevated one cubit at the end of this first confession. The four other princes followed the example of their eldest brother, by which means the same prodigy happened, that is, at the end of the fifth confession, the fruit was only five cubits high.

Nothing was now wanting but one cubit; but the last effort was reserved for Draupadi. After a great many struggles she began her confession, and the fruit was gradually elevated. She said she had done, and yet the fruit wanted half a cubit

to rejoin the tree whence it had fallen. It was evident she had forgot, or rather concealed something. The five brothers begged her with tears in their eyes, not to ruin herself thro' a culpable shame, and not to involve them in her misfortune. Their prayers had no effect; but Chrichnen coming to their assistance, she declared an intentional sin which she wanted to keep secret. Hardly had she spoke till the fruit began its marvellous course, and of its own accord fix'd itself on the branch where it hung before.

### C H A P. III.

*Of the singular form of the Chinese vessels; a description of the islands of Ponghou, and of the island of Formosa; the manners and customs of the inhabitants of these islands. The conquest of the island of Formosa from the Dutch by the Chinese.*

THE largest Chinese vessels of war are from one hundred and fifty to three hundred tons burden. They are, properly speaking, but flat boats with two masts. They do not exceed eighty or ninety feet in length, and sixty or seventy in breadth. The masts, sails, and rigging of these vessels are ruder than their built; for their masts are made of trees no otherwise fashioned, than by lopping off their branches.

These vessels have neither mizen-mast, bowsprit nor top-gallant-mast. All their masts are the main-mast and the fore-mast, to which they sometimes add a small top-gallant-mast, which is not of great use. The main-mast is placed almost  
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where we place ours, and the fore-mast is on the fore-castle. The proportion of the one to the other is generally as two to three ; and that of the main-mast to the vessel, is nearly so, being generally more than two thirds of the length of the vessel.

Their sails are made of mats of bamboo, or a kind of canes common in China, strengthened every three feet by an horizontal rib of the same wood. At top and bottom are two pieces of wood ; that above serves as a yard ; that below made in form of a plank, more than a foot broad, and about six inches thick, retains the sail, when they want to hoist or furl it. These vessels are by no means good sailors ; however they hold more wind than ours. This is owing to the stiffness of their sails, which do not yield to the wind. But as the construction of them is not advantageous, they lose the advantage they have in this point over ours.

The Chinese do not caulk their ships with pitch, as in Europe. Their caulking is made of a particular gum, and is so good that the vessel is kept dry by a well or two in the hold. They have as yet no knowledge of the pump. Their anchors are not iron, as ours, but are made of a hard and weighty wood which they call iron-wood. They pretend that these anchors are much better than those of iron, because, say they, those last are subject to bend, which never happens to those of wood.

They have neither pilot nor master. The steersmen conduct the ship, and give orders for the working. However, they are pretty good sailors and good coasting pilots ; but very bad ones in the main-sea. They steer by that point of the compass which leads directly to the place they are bound for, without minding the shocks the vessel receives.

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This negligence, or rather ignorance, proceeds from their not making long voyages.

*A Description of the islands of Ponghou, and of the island of Formosa.*

THE islands of Ponghou form a small archipelago of thirty-six barren islands, which are only inhabited by a Chinese garrison. As these islands consist intirely of sand and rock, the necessities of life must be brought either from Hiamen or from Formosa. When the Dutch were masters of the bridge of Formosa, they built a kind of fort at the end of the great island of Ponghou upon the harbour, in order to defend its entry. This harbour, tho' in an uncultivated and uninhabited country, is absolutely necessary for the preservation of Formosa, which has no harbour that can admit vessels which draw more than eight feet of water.

All the island of Formosa is not under the government of the Chinese. It is, as it were, divided into two parts, east and west, by a ridge of high mountains. The eastern part, say the Chinese, is only inhabited by barbarians. The country is mountainous, uncultivated, and savage.

The part of Formosa which the Chinese possess, certainly deserves the name it bears. The air is there pure and always serene. The country is fertile in all kinds of grain, and watered by a great many rivulets descending from the mountains which divide it from the eastern part. The soil here produces abundance of corn, rice, &c. We here find most of the Indian fruits, such as bananas, ananas, goyaves, papayas, cocos, &c. Here also we find peaches, apricots, figs, grapes, chesnuts, pomgranets, and melons. Tobacco and sugar  
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thrive very well. All the trees are so agreeably ranged, that when the rice is transplanted, the vast plain of the meridional part rather resembles a beautiful garden than a simple field.

As this country has hitherto been only inhabited by a barbarous and uncivilized people, horses, sheep, and goats, are very rare in it. But hens, ducks, and geese are found in great plenty. There are also a great many oxen, which are used instead of horses, mules, and asses. They back them very soon, and they go as well and as fast as the best horses. They use bridle, saddle, and crupper, which are sometimes of great value.

Stags and apes are here very common, but deer are very rare. If in this country there are bears, wild boars, lions, tygers, and leopards, as in China, they are only found in the mountains of the eastern part. Here there are very few birds, and the most common are pheasants.

The Chinese divide the territories they possess, in the island of Formosa, into three subordinate governments, which depend on the capital. This capital, which is called Tai-ovan-fou may be compared with most of the best and most populous cities of China. We there find all that can be wished for, partly by the natural produce of the island, such as rice, sugar, sugar-candy, tobacco, salt, venison, fruits of all kinds, cotton, hemp, the bark of certain trees, and of a certain plant which pretty much resembles a nettle, a great many medicinal herbs, most of which are unknown in Europe. Other commodities are imported, such as stuffs from China and the Indies, silks, varnishes, porcelains, and the different manufactures of Europe.

As Formosa is a very important place, and as the Chinese might excite great troubles in the empire, if they get possession of it, the Tartars keep

in it a garrison of ten thousand men, commanded by two lieutenant-generals, two major-generals, and several subaltern officers, who are changed every three years, and oftener, if there is reason for it.

The streets of the capital are very regular, and all covered seven or eight months of the year to defend the inhabitants from the heat of the sun. They are only about thirty or forty feet broad, but very near a league long in some places. They are almost all full of merchants houses, and shops adorned with silks, porcelains, varnishes, and other merchandizes, admirably well arranged, in which the Chinese excel. These streets appear like so many charming galleries. The houses are covered with straw, and most of them are only built of earth and bamboo, but the tents which cover the streets, only permitting the shops to be seen, conceal the disagreeable appearance of the houses. The house which the Dutch built when they were masters of it, is of considerable value. It is a large house three stories high, and defended by a rampart of four demi-bastions. This house looks to the point, and could, in case of necessity, oppose the landing of an enemy.

Tai-ovan-fou has neither fortification nor walls; the Tartars do not place their strength and courage in inclosures and ramparts. They love to fight on horse-back in open fields. The harbour is pretty good, and defended from all winds, but the entry into it becomes daily more and more difficult. Formerly there was a possibility of entering it in two places; one where the largest vessels anchor'd easily; and the other, whose bottom is a rock, is no more than nine or ten feet deep in the highest tides. The former passage is not at present navigable, and is daily fill'd up more  
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and more by the sand which the sea conveys to it.

The part of Formosa which is subject to the Chinese, is composed of two kinds of people; the Chinese, and the natives of the country. The inhabitants of Formosa, who are subjects to the Chinese, are divided into forty-five villages, of which thirty-six lie toward the north, and nine toward the south. The villages towards the north are pretty populous, and the houses nearly resemble those of China. Those towards the south are cottages built of earth and bamboo, covered with straw, and raised upon a bed three or four feet high. They are built in the form of a reversed funnel, and are fifteen, twenty, thirty, or forty feet in diameter. In these huts the inhabitants have neither chairs, stools, tables, beds, nor any kind of furniture. In the middle there is a kind of chimney or stove three or four feet high. They generally feed upon rice, small grain, and the animals which they catch, either by pursuing them, or by killing them with their arms. They run more swiftly than the best horse; and this swiftness, say the Chinese, proceeds from this, that till the age of fourteen or fifteen they entirely swaddle their knees and loins. For arms they have a kind of javelin, which they throw seventy or eighty paces with the greatest exactness. Tho' nothing is more simple than their bows and arrows, yet they kill a pheasant flying as surely as we do in Europe with a gun. They are very slovenly in their repasts, and what they have prepared, they lay upon a piece of wood or mat, and eat it with their fingers almost like apes. They eat their flesh half raw, and provided it has been but a little at the fire it appears excellent to them. For a bed they gather the fresh leaves of a tree which is very common among them. They extend them-

selves

selves either on the ground, or on the floors of their cottages, when they go to sleep. For habit they have only a bit of simple stuff, with which they cover themselves from the middle to the knees. Upon their skins they cut many grotesque figures of trees, animals and flowers. This produces such intense pains, as would prove mortal if the operation was performed at once, but they employ several months, and very often a whole year for this purpose. During this time they are under the severest torture, in order to gratify their propensity to distinguish themselves from the croud; for it is not permitted to all persons indifferently to bear these signs of magnificence. This privilege is only granted to those, who in the judgment of the most considerable men of the town have surpassed the rest in running or hunting. All of them, however, may black their teeth, wear ear-rings, and bracelets above the elbows or wrists, necklaces, and crowns of small beads of various colours and many rows. The crown is terminated by a kind of tuft, composed of the feathers of a cock or pheasant, which they gather with great care.

In the northern part, where the climate is not so hot, they cover themselves with the skins of the stags which they take. Their habit has no sleeves, and they wear a bonnet in form of a cylinder, and made of the leaves of banana trees. These bonnets they adorn with several crowns placed over each other, and tied with fillets of different colours. To the top of the bonnet they also fix a tuft of feathers, as those in the south do.

Their marriages have nothing barbarous in them. They do not buy women as at China. They have no regard to the riches of each other, and the parents almost never contract for any thing. When a young man wants to be married, and finds

a woman agreeable to him, he goes several days successively, and serenades her before the door of the house in which she lives. If the woman likes him, she goes out to him. They agree upon their articles, and acquaint their fathers and mothers with their intention, who prepare the wedding feast, which is kept in the woman's house, where the man remains without returning to his father. From that time the man looks upon the house of his father-in-law as his own, and is the support of it. The islanders do not like male children, but rather daughters, who may bring them grand-children to support them in their old age.

Tho' the islanders are intirely subject to the Chinese, they have still some remains of their ancient government. Every village chuses three or four of the oldest men who have the character of probity and candour, and these are judges over the rest. They give a final determination of all differences; and if any one refuses to stand to their judgment, he is forthwith banished out of the village, without any hopes of ever returning to it, and no other village dares to receive him. They pay their tribute to the Chinese in grain. To regulate what concerns this tribute, there is in each village a native of China, who learns the language in order to interpret to the mandarines. But these interpreters are merciless and cruel extortioners of the poor people.

Among these islanders, we find neither villainies, nor robberies, nor processses. They are equitable, and love each other. They are attentive to the smallest signal from those who have a right to command them. They are circumspect, and extremely modest in their words.

Tho' Formosa is not far from China, yet the Chinese, according to their history, only began to know it in 1430, when the eunuch Ovan-san-pao returning from the west, was thrown upon it by a tempest. He carried several plants out of it, and several medicinal herbs, which are still used with success in China.

In 1564, a ship of the Chinese squadron cruising on the eastern sea of China, met with a corsair, who had taken possession of the islands of Ponghou, where he had left some of his men. He no sooner saw the Chinese ship than he made a violent attack upon her; but after a combat of five hours he was obliged to fly to the islands of Ponghou. His enemy pursued him so closely, that by break of day the corsair found the entry of the port of Ponghou shut up by a part of the Chinese squadron, which obliged Lint-ao-kien, which was the corsair's name, to moor at Formosa. The Chinese ship took the islands of Ponghou. Lint-ao-kien master of Formosa ordered all its inhabitants to be killed, and setting sail he retired to the province of Canton, where he died miserably.

About the end of the year 1620, a Japanese squadron arrived at Formosa, and made themselves masters of it. About the same time a Dutch vessel was thrown by a tempest upon Formosa. They found the Japanese not in a condition to annoy them. The country appeared beautiful to the Hollanders, says the Chinese historian, and advantageous to their commerce. They represented the necessity they had of some provisions, and other things to refit their vessel, which had been much damaged by the tempest. They begged of the Japanese, that they would permit them to build a house on the frontiers of the island, which lies at one of the entries of the harbour, from

which they might afterwards reap some assistance in the commerce they should carry on with Japan.

The Japonese at first rejected the proposal, but the Dutch insisted so strongly, that they would take up no more ground than could be contained in an ox's skin, that the Japonese at last consented. The Dutch took an ox's skin, which they cut into small shreds, and sewed to each other. With this they measured the ground they wanted, which was large enough to build a fort upon.

The building of this fort rendered the Dutch masters of the port, and of the only passage thro' which large vessels can enter into it. Perhaps the Japonese knew the importance of this too late. Be this as it will, whether the new fort gave them umbrage, or whether they did not find this island, as yet uncultivated, to answer their purpose, they soon after quitted it, and suffered the Dutch to remain masters of it.

At this time China was all in an uproar, partly by the civil wars, and partly by the war it carried on against the Tartars, who at last took it. One of the Chinese, who most courageously opposed the Tartars, was a man of fortune, whose name was Tching-tchin-cong. He, at his own expence, fitted out a small fleet, and was soon followed by a multitude of Chinese vessels. By this means he became master of a very formidable fleet. The Tartars offered him the dignity of a king if he would become their friend. He refused the offer, but did not long enjoy his good fortune. His son who succeeded him in the command of his numerous fleet, besieged several considerable towas, which he took, after having cut to pieces the army of the Tartars which came to their relief. These first instances of success did not long continue. He was, at last, conquered by  
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the Tartars, and absolutely expelled out of China. He then formed a design upon Formosa, from which he resolved to expel the Hollanders, in order to establish a new kingdom there. This happened in the year 1661. He first made himself master of the islands of Ponghou, then advanced towards Formosa, entered the port with his fleet, which consisted of nine hundred sail, and sent a body of his men on shore, in order to attack the fort by sea and land. The siege lasted four months, during which the Dutch, who were only eleven in number, defended themselves by their cannon, more happily than could be expected. Tching-tchin-cong was reduced to great despair, upon seeing so much courage and resistance from this handful of Europeans, against so numerous an army as his own.

As the Chinese had not the use of cannon, they could not answer those of the Dutch, so that they had no hopes of reducing them but by famine, which required a long time, during which they could receive supplies from their Barbary ships, or from those which went to trade at Japan. Tching-tchin-cong knew the whole difficulty of his enterprize, but he was out of China, without any hopes of ever entering it again under the Tartars, on whom he had made war. Besides, he knew that if Formosa was shut up against him, he should have no expedient left to make his fortune. For this reason he determined to use his utmost efforts against the Dutch. These last had four vessels in the river, and had put one of their men into each, with a guard of Indians. The seven other Hollanders had shut themselves up in the citadel or fort of Zealand. The Chinese captain resolved to sacrifice some of his vessels which he had converted into fire-ships, and taking the ad-

vantage of a violent north-east wind, he sent them among the Dutch vessels, and succeeded beyond his expectation; for of four ships three were burnt. Upon this he demanded the Hollanders in the fort to surrender, declaring that he would permit them to retire with all their effects; but that if they persisted to defend themselves, he would give them no quarter. The Dutch who had only one ship left, voluntarily accepted the offer. They loaded the ship with all their effects, restored the place to the Chinese, and retired.

Tching-tchin-cong at Formosa established the same laws, customs, and government with those of China; but he did not long enjoy his new conquest: for he died a year and some months after he took possession of his island. His son Tehing-tchin-cong succeeded him, but did little or nothing to cultivate the country which his father had obtained for him with so much care and fatigue. For a successor he left his son Tching-ke-san very young, and under the care of two officers who were intirely attached to him. In the year 1682, the Tartar emperors abolished the title of king of Formosa, and established a vice-roy in it. Tching-ke-san was obliged to abandon his states and return to Peking, where all the favour shewn him was to create him a count.

## C H A P. IV.

*Origin of porcelain, what the matter of it is, and the manner of preparing it ; composition of the varnish laid upon it ; different species of it ; manner of gilding it ; structure of the furnaces for burning it ; cases to bake it in ; idol of it ; its origin ; wherein the ancient differs from the modern porcelain, &c.*

THE annals of the city of Feou-learn relate, that since the year 442, the workers in porcelain have always supplied the emperors with it, and that one or two mandarines sent from the court had the care of that work. 'Tis however probable, that before the year 442, porcelain was in use ; and that it has been gradually brought to such a degree of perfection as determines the richest Europeans to use it. It is not said who was the inventor of it, nor to what experiment or chance we owe it. The fine porcelain, which is of a bright and lively white, and of a beautiful sky blue, is all brought from King-te-tching. There is porcelain made in other parts ; but it is very different from this both in colour and fineness. The emperors have brought to Peking workers in porcelain, and all the materials employed in making it, but their work never succeeded. King-te-tching alone, has the honour of sending porcelain to all the parts of the world. The Japanese come to buy it at China. King-te-tching wants nothing but walls in order to make it a city. There are eighteen thousand families in it. The merchants are rich, and their houses so large as to contain a prodigious number of workmen. It is commonly



said that it contains a million of inhabitants, who every day consume ten thousand loads of rice, and more than a thousand hogs.

King-te-tching is situated on a plain, surrounded by high mountains. That towards the east, which stands at its back, forms a kind of semicircle externally. The mountains at the sides give passage to two rivers which meet each other. One of these is but small, but the other is very large, and forms a beautiful port near a league in extent, in a vast basin, where it loses a great deal of its rapidity. In this port we sometimes see two or three rows of ships from one end to the other. Such is the spectacle, when we enter by one of the mouths into the harbour. The clouds of flame and smok which rise in different parts easily discover the extent and windings of King-te-tching. At night one would think he saw a whole city on fire, or a great furnace with many vents. Perhaps this inclosure of mountains, forms a situation proper for making porcelain.

The matter of which it is made is composed of two kinds of earth, one of which is called Petunse and the other Kaolin. This last is intermixed with corpuscles which have a kind of splendor; but the other is simply white, and very fine to the touch. At the same time that a great number of large barques ascend the river of Jaotcheou to King-te-ching to be loaded with porcelain, almost as many small ones descend from Kimuen, loaded with Petunse and Kaolin, reduced to the form of bricks: for King-te-ching produces none of the materials proper for the porcelain. The Petunses, whose grain is so fine, are nothing else but pieces of rocks dug out of quarries, and moulded into this form. All stones are not proper for this purpose, otherwise it would not be necessary to go twenty or thirty leagues into the other province for it.

it. The Chinese say, that the stone ought to be of a greenish colour.

The first step of the preparation is this; they break these pieces of stone with a large bar of iron, after which they put the broken pieces into mortars, and with pestles which have heads of stone covered with iron, they reduce them to a very fine powder. These pestles play continually either by the labour of men, or by water, as the hammers of our paper-mills do. After this they throw the powder into a large urn full of water, and stir it briskly about with an iron pestle. When they allow it to rest some minutes, a kind of cream, four or five fingers breadth thick, floats on the surface. This they take off and pour into another vessel full of water. Thus they several times agitate the water of the first urn, gathering the cream each time, till there remains none but the grosser parts, which subside to the bottom. These are taken out and pounded afresh.

With respect to the second urn, into which they throw what they had collected from the first, they wait till a kind of paste is formed at the bottom of it. When the water above this paste appears very clear, they pour it off by inclination, that they may not disturb the sediment, and they throw this paste into large moulds proper to dry it. Before it is quite hard they divide it into small square pieces, which are sold by the hundred. This figure and its colour have made it get the name of Petunse.

The moulds into which this paste is thrown are a kind of very large and broad cases. The bottom is filled with bricks laid end-ways, so as to make the surface equal. Over this bed of bricks, thus ranged, they spread a cloth, as large as the cavity of the mould. Then they pour in the matter, which they cover with another cloth, over

which they place a bed of bricks laid flat on each other. This is done in order to force out the water the sooner, without losing any thing of the matter of the porcelain, which by becoming hard, easily receives the form of bricks. There would be nothing more to be added to this labour, if the Chinese were not accustomed to alter their merchandize; but people who roll small grains of paste in pepper, in order to cover them with it, and mix them with genuine pepper, do not care to sell Petunse without mixing some sediments with it; for which reason they are obliged to purify them at King-te-tching before they make use of them.

The Kaolin which enters the composition of the porcelain, gives less trouble than the Petunse; nature has a greater hand in producing it. There are mines of it in the bosom of certain mountains, which are covered internally with a reddish earth. These mines are pretty deep, and contain the Kaolin in lumps, which they cut into squares, in the same manner with the Petunse. The white earth of Malta, commonly called St. Paul's earth, has a great resemblance to the Kaolin, tho' the former has not the little silver grains with which the latter is interspersed.

'Tis from the Kaolin, that the fine porcelain derives all its strength. Thus it is the mixture of a soft earth which gives strength to the Petunses, which are taken from the hardest rocks. Some English and Dutch bought some Petunse, and brought it into their own countries to make porcelain; but their enterprize failed, because they had no Kaolin.

Besides the barques loaded with Petunse and Kaolin, with which the skirts of King-te-tching are covered, we see others full of a whitish liquid substance;

stance; and this is the oil, which gives the porcelain its whiteness and lustre. This oil or varnish is drawn from the hardest stone, which is not surprising, since it is thought that stones are principally formed of the salts and oils of the earth, which mix and are intimately united with each other.

Tho' the species of stone, of which the Petunses are made, may be indifferently used to obtain the oil, yet they generally chuse that which is whitest, and has the greenest spots. Tho' the history of Feu-oleam does not descend into a detail, yet it says, that the good stone for the oil, is that which has spots, of the colour of a cypress leaf, or which has red marks on a brownish ground. This stone must be first well wash'd, after which it undergoes the same preparations with the Petunse. When they have in the second urn the hardest parts they could take from the first, they throw a pound of stone or mineral like alum, upon a hundred pounds or thereabouts of this cream. It must be made red by the fire, and afterwards pounded. This is, as it were, the pressure which gives it consistence, tho' they take care to keep it always liquid.

This oil of stone is never employed alone. They mix another with it, which is, as it were, the soul of it. The composition is as follows; they take large pieces of quick-lime, on which they throw a little water to dissolve and reduce them to pieces. Then they make a bed of dry fern, over which they lay another of slak'd lime. Of these they put several alternately over each other. After this they set fire to the fern. When the whole is consumed, they spread these ashes on new beds of dry fern. This is done five or six times, and the oftener they do it the oil is the better. Formerly, says the history of Feu-oleam, besides fern they used

used the wood of a tree whose fruit is called Se-tse. If we judge of this tree by the sourness of the fruit before it is ripe, and by its small top, we should take it to be a kind of medlar. 'Tis no longer used at present, probably because it is become too scarce in that country. Perhaps, 'tis for want of this wood, that the present porcelain is not so beautiful as those of former times. The nature of the quick-lime and fern also contributes to the goodness of the oil; and it is observable, that what is brought from some parts is better than what comes from others.

When they have a certain quantity of the ashes of quick-lime and fern, they throw them into an urn full of water. Upon an hundred pounds they must dissolve one pound of Ke-kao, stir the mixture well, and allow it to rest, till there appear on the surface a cloud or crust, which they take off, and put into a second urn. This they repeat several times. When a kind of paste is formed at the bottom of the second urn, they pour off the water by inclination, and keep this liquid paste, which is the second oil, to be mixed with the former; for a just mixture of these two depurated oils they must be equally thick. In order to judge of this, they several times plunge into each of them pieces of Petunse, by taking which out, they see upon their surface whether they are equally thick. This is what relates to the quality of those two oils. As for the quantity, the best way is to mix ten measures of the oil of stone, with one measure of the oil of quick-lime and fern. They who are most sparing never put less than three measures. If the merchants who sell this oil have the least inclination to cheat, they can easily augment its bulk by throwing water into it, and adding a proportional quantity of Ke-kao, to cover this fraud, and hinder the oil from being too liquid.

Before

Before I explain the manner of applying this oil, or rather varnish, I shall describe how the porcelain is made. We shall first begin with the work performed in the least frequented parts of King-te-ching. There in an inclosure of walls, they build vast piles, where we see one story above another a prodigious number of earthen urns. In this inclosure live and work an incredible number of labourers, each of whom has his task set him. Before a piece of porcelain is taken out of this to be carried to the furnace, it passes thro' more than twenty hands, and that without confusion. They have no doubt found that by this means the work is much more quickly carried on.

The first labour consists in purifying again the Petunse and the Kaolin from the dregs which remain in them when they are sold. They bruise the Petunse and throw it into an urn full of water. Then they dissolve it by stirring it about with a large spatula. They let it rest some moments, and take off what swims on the surface, and so of the rest, in the manner above explained.

As for the pieces of Kaolin, it is not necessary to break them. They only put them into a basket, which they immerse into an urn full of water. The Kaolin is easily dissolv'd of itself; there generally remains a sediment, which must be thrown away. In a year's time the dregs are accumulated, and form great heaps of white sand separated from the Kaolin. Thus prepared there must be a just mixture of them. For fine porcelain, they put in as much Kaolin as Petunse; for ordinary porcelain they put four parts of Kaolin to six of Petunse. The least they ever put are five parts of Kaolin to three of Petunse.

After this first operation they throw this mass into a large cavity well paved and cemented every

where. Then they tread upon it and knead it till it becomes thick.

From this mass thus prepared, they take different pieces, which they extend upon large slates. On these they knead and form them into all different shapes, taking care that there be no flaws in it, nor no mixtures of extraneous bodies; for a hair, or a grain of sand, would spoil the whole work; for want of rightly managing this mass, the porcelain splits, cracks and warps. 'Tis from these first elements, that we have so many beautiful works of porcelain, some of which are made on the wheel, others are only made upon moulds, and afterwards perfected by the chissel.

All the plain or smooth works are made in the former manner. A cup, for example, when it comes off the wheel, is no more than a kind of imperfect cavity, almost like the crown of a hat before it is formed on the block. The workman first gives it the diameter and height he wants, and it comes out of his hands almost as soon as he has begun; for he has only three farthings English money for a shelf, and every shelf contains twenty-six pieces. The foot of the cup is at that time only a piece of earth of the bulk and diameter which it ought to be of, and which is hollowed out with the chissel, when the cup is dry, and has acquired consistency; that is, after it has received all its ornaments. This cup, on coming from the wheel is first received by another workman, who places it upon its bottom. A little after it is given to a third, who applies it to its mould, and gives it the same figure. This mould is a kind of turning wheel. A fourth polishes this cup with the chissel, especially near the lips, to render it thin and transparent. He scrapes it several times, moistening it a little with water, if it is too dry, lest it should break.

break. When the cup is taken off the mould, it must be rolled gently on the same mould, without pressing more on one side than another, without which there will either be flaws in it, or it will warp. It is surprising to see with what speed one of these cups passes thro' so many different hands. Some say that a piece of porcelain has passed thro' the hands of seventy workmen.

The large pieces of porcelain are made at two different times. One half is raised on the wheel by three or four men, who support it, each on the side next to him, to give it its figure. The other half being almost dry is applied to it, and united with it by the matter of the porcelain diluted in water, which serves as a kind of mortar or cement. When these pieces, thus united, are entirely dry, they with a knife scrape the internal and external sides of the part where the union was, which by means of the varnish with which they cover it, becomes equal to the rest. 'Tis in this manner that they apply handles, ears, and other ornaments to vessels. This principally regards the porcelain made upon moulds or by the hands, such as ribbed pieces, or such as are of a whimsical figure; such as animals, idols, or busts, which the Europeans bespeak, and other things of a similar nature. These kinds of moulded works are made in three or four pieces, which they join to each other, and afterwards perfect with instruments proper to hollow, polish, and repair the different parts which had escaped the mould. As for their flowers and other ornaments which are not raised, but, as it were, engraved, they are applied to the porcelain with seals and moulds. They also apply raised work, prepared almost in the same manner that gold lace is sewed on a coat.



What follows relates to these kinds of moulds. When they have the model of the piece of porcelain which is wanted, and which cannot be imitated on the wheel by the hands of the workman, they apply over the model, earth proper for the moulds. This earth receives the impression, and the mould is made of several pieces, each of which is pretty large. They suffer the mould to become hard, when the figure is imprinted on it. When they want to use it, they place it near the fire for some time, after which they fill it with porcelain, in proportion to the thickness they want to give it; they press with their hands on all parts, and then for a moment present the mould to the fire. The imprinted figure is forthwith detached from the mould by the action of the fire, which a little consumes the humidity which glew'd this matter to the mould. The different pieces of the whole drawn separately are afterwards re-united, with the somewhat liquid matter of the porcelain. In this manner they make the figures of animals, which are all solid. They leave this mass to harden, give it the figure proposed, perfect it with the chissel, or add the parts formed separately. These kinds of works are made with great care and pains. When the work is finished they lay on the varnish and bake it. Then, if they please, they paint it of various colours and gild it. Then they bake it a second time. Pieces of porcelain thus finished, are sold extremely dear. All these works ought to be defended from the cold; humidity makes them split when they are not dried equally, for which reason they sometimes keep fires in these laboratories.

These moulds are made of a fat yellow earth, which is found in a place near King-se-tching. This earth is kneaded, and when it is well united,  
and

and become a little hard, they take a quantity of it necessary for the mould, and beat it strongly. When they have given it the desired figure, they dry it, and form it on the wheel. This kind of work is sold dear. In order speedily to answer a commission, they make a great quantity of moulds, that vast numbers of labourers may be employed at once. If these moulds are taken care of, they last a long time. A merchant who has them ready for the porcelain works bespoke by an European, may sell his commodity better, and make a much more considerable gain than another, who should have them to make. If these moulds should happen to crack or have their surfaces splintered, they are no longer of any service, except for porcelain of the same figure but of a smaller size.

In this case they put them on the wheel and smooth them, that they may serve a second time.

They often embellish their porcelain by making it pass thro' the hands of painters, who are not much richer than the other workmen. At this we need not be astonished, since except a few of them, they would only pass in Europe for apprentices, who had been some months at the business. The whole science of these, and of the Chinese painters in general, is founded upon no principle, and only consists in following a certain beaten track, assisted with a narrow and confin'd imagination. They are ignorant of all the beautiful rules of this art. We must however confess, that they paint flowers, animals, and landscapes, which are admired on the porcelain, as well as on screens, and the window-blinds of fine gauze.

The painting is divided in the same laboratory among a great number of hands. One only forms the first coloured circle near the edges of the china. The other traces the flowers, which a third paints,

paints. One is for rivers and mountains, another for birds, and others for animals. Human figures are generally most mangled by them. Certain landfhips and plans of cities illuminated, carried from Europe to China, hardly afford us the liberty of laughing at the Chinese method of painting.

As for the colours of the Chinese painting, they are of all sorts. The most common in Europe is of a lively blue on a white ground. There are some in which this ground resembles that of a burning glass. Some are intirely red, and among these some are coloured in oil, while others are of a blown red, and intermixed with small points almost like our water colours. When these two works succeed to their perfection, which they rarely do, they are accounted extremely valuable, and are sold at a great price.

There are some porcelains in which the landfhips are formed of a mixture of almost all sorts of colours heightened by the gilding. These are very beautiful when of the right kind, but the ordinary porcelain of this sort, is not comparable to that painted with azure alone.

The annals of King-te-tching say, that formerly the meaner people only used white porcelain. This probably happened, because they had not in the neighbourhood of Jao-tcheou found a less valuable azure than that us'd for the finest porcelain, which is brought far and sold dear.

'Tis said that a merchant who dealt in porcelain being shipwreck'd on a desert coast, found there much greater riches than he had lost. As he wandered on the coast, while the crew were building a small bark of the wrecks of the ship, he perceived that the stones proper for the most beautiful azure were very common there. He brought a large  
cargo

cargo with him, and it is said that by this means there was never so beautiful an azure seen at King-te-tching. The Chinese merchant in vain attempted to find that coast again, on which he had been thrown by chance.

The azure is prepared in the following manner. They bury it in gravel, which is about half a foot high in the furnace; here they bake it twenty-four hours. Then they reduce it to an impalpable powder as well as the other colours; not upon marble, but in large porcelain mortars, whose bottoms are without varnish, as well as the pestles employed to pound it.

The red colour is produced with copperas. They put a pound of copperas in a crucible; which they lute with another crucible, in the superior end of which is a second aperture; which is covered in such a manner, that it may be easily uncovered; if necessity requires. They surround the whole with a large char-coal fire; and that they may have the stronger reverberation of the heat, they inclose the whole with bricks. So long as the smoke rises very black, the matter is not duly prepared. But as soon as a small, fine and subtil cloud arises, it is sufficiently done. Then they take a little of this matter, dilute it in water, and make tryal of it upon a piece of board. If a beautiful red is produced by it, they remove the fire which surrounds it, and in part covers the crucible. When the whole is cold they find a small cake of this red at the bottom of the crucible: but the best red adheres to the superior part of it. A pound of copperas yields four ounces of the red, with which they paint the porcelain.

Tho' the porcelain is naturally white, and rendered still more so by the varnish, yet there are certain figures for which they apply a particular white upon the porcelain, which is painted of several colours. This white is made of the powder

of transparent flints, which is calcin'd in the furnace, in the same manner as the azure. To half an ounce of this powder they add an ounce of cerufs pulverized. For example, to make the green, to one ounce of cerufs, and half an ounce of the powder of flints, they add three ounces of what they call Tom-hoa-prien, which, according to all appearances, are the finest scorizæ of copper reduced to powder.

The prepared green becomes the matter of the violet, which is made by adding a proper quantity of white. They add more of the prepared green, in proportion as they want the violet more deep. The yellow is made by taking seven drams of prepared white, to which they add three drams of copperas. All the colours laid upon the porcelain already bak'd, after they are varnished, do not appear green, violet, red, or yellow, till they are baked a second time. These different colours, says the Chinese book, are applied with cerufs, saltpetre, and copperas. Some say that they only employ cerufs, which is mixed with the colour, when they dissolve it in gum-water.

The red colour in oil is produced by mixing the red Tom-lou-hum, or even the red I have mentioned, with the ordinary oil of porcelain, and another oil made of white flints, in the same manner with the first species of oil. Several trials discover the particular quantity of each to be used. Then they leave the porcelain to dry, and bake it in the ordinary furnace. If, after the baking, the red comes out pure and sparkling, without the least stain, they have then attained to the perfection of the art. These kinds of porcelains do not sound when they are struck.

The other species of blown red is made thus : they have the red prepared ; they take a pipe, of which the apertures <sup>are</sup> covered with fine gauze. They

They gently apply the lower end of the pipe to the colour laid on the gauze, after which they blow into the pipe against the porcelain, which is by that means beautified with red spots. This sort of porcelain is still dearer and rarer than the preceding, because the production of it is more difficult, if the workman observes all the requisite proportions.

The black porcelain has also its beauty and value. It is called Oumien. The black is leaded, and resembles that of our burning glasses. The gold laid upon it renders it still more agreeable. They give this black colour to the porcelain when it is dry ; and for this purpose, they mix an ounce of azure with seven ounces of the ordinary oil of stone. Trials exactly teach the proportions of this mixture, according to the deeper or fainter colour they intend to give to the porcelain. When this colour is dry, they bake the porcelain, after which they lay on the gold and bake it again in a particular furnace.

There is also a kind of porcelain made, which externally is all pierced like pinking. In the middle is a cup proper to contain the liquor. The cup however is but one substance with the pinked work. There are other porcelains on which the Chinese or Tartar ladies are painted to the life. The drapery, the complexion, and the features are all preserved. At a distance these works are taken for enamel.

It is to be observed, that when they lay no other oil on the porcelain than that of white flints, this porcelain is of a particular species, and is called Tlou-tchi. It is all marbled and crossed in all directions, with an infinite number of veins. At a distance one would take it for broken porcelain, the whole of whose pieces remained in their places, so that it resembles Mosaic work. The colour which this

oil gives is a white somewhat cineritious. If the porcelain is all azured, and if they lay this oil on it, it will appear both cut and marbled when the colour is dry.

When they apply the gold they pound it, and dissolve it in the bottom of a porcelain vessel till they see under the water a small canopy of gold. They suffer it to dry, and when they want to use it, they dissolve a sufficient quantity of it in gum-water. With thirty parts of gold they incorporate three parts of cerufs, and lay it on the porcelain in the same manner with the other colours.

There is also a species of porcelain made in the following manner. They give it the ordinary varnish and bake it, then paint it with different colours and bake it again. They sometimes designedly delay the painting till after the first baking. Sometimes also they have recourse to the second baking, to conceal the faults of the porcelain, by applying colours to the defective places. This porcelain which is full of colouring, is agreeable to the taste of a great many people. It generally happens that we feel inequalities on this sort of porcelain, and these have been necessary either to supply the shades of the painting, or cover the defects of the porcelain. When the painting is dry, as well as the gilding, if there is any, they make piles of the porcelain, and putting the small into the large vessels, place them in the furnace.

These furnaces may be of iron when they are small, but generally they are of earth. Some of them are as high as a man, and almost as wide as one of our largest hogsheds for wine. They are made of several pieces, of the same matter with the cases for the porcelain. They are large pieces about an inch thick, a foot high, and a foot and

an half long. Before they bake them they give them a figure proper for becoming round. They are placed over each other and well cemented. The bottom of the furnace is raised about a foot and an half above the ground, and placed upon two or three rows of thick, but not very broad bricks. Round the furnace is a well-built inclosure of bricks, which at its bottom has two or three air-holes, which serve as bellows to the fire. This inclosure is a foot and an half distant from the furnace, except in three or four places which are filled up, and serve as supports to the furnace. They at the same time remove the furnace and the inclosure, without which the furnace cannot stand. They fill the furnace with the porcelain they want to bake, a second time, piling the small into the large vessels. When this is done they cover the mouth of the furnace with pieces like those of which its sides are built. These pieces, whose edges are laid over each other, are closely united with mortar, or a kneaded earth fit for that purpose. They only leave an aperture in the middle, in order to observe when the porcelain is bak'd. They afterwards kindle a quantity of coals under the furnace. They also kindle coals on the covering, whence they throw the ashes into the spaces between the inclosure of bricks and the furnace. The aperture in the top of the furnace is covered with a piece of a broken pot. When the fire is burning, they now and then look thro' this aperture, and when the porcelain appears to be shining and painted with brisk and lively colours, they remove the fire and take out the porcelain.

There may naturally arise a thought concerning the colours which are incorporated with porcelain already bak'd and varnished with cerufs, to which, according to the annals of Feou-learn, they added



saltpetre and copperas. If we employ'd cerufs in the colours with which we paint the squares of glass, and afterwards give them a second kind of baking, might not this cerufs restore to us the ancient secret of painting glass without destroying any thing of its transparency? but this is only to be judged of by experience.

The Chinese had formerly the art of painting on the sides of porcelain vessels, fish and other animals, which were only perceptible when the vessel was full of some liquor. They call this species *Kia-tsin*, that is, azure, is put in press, on account of the manner in which the azure is laid on. This is all that is retained of this secret. Perhaps in Europe we may conjecture at what the Chinese are ignorant of. The porcelain to be painted thus ought to be very thin. When it is dry we ought to apply a pretty faint colour, not externally, as is usual, but within on the sides. They paint fish as most proper to appear when the cup is filled with water. When the colour is once dry they lay over it a slight bed of strong but fine glue, made of the same earth as porcelain. This bed incloses the azure between these two laminæ of earth. When the bed is dry they lay the varnish on the inside of the porcelain. Sometime after they put it on the mould and wheel. As it has received a body in the inside, they render it externally as slender as possible, without penetrating to the colour. Then we must put the outside of the porcelain into the varnish; and when the whole is dry they bake it in the common furnace. This labour is extremely nice, and requires a dexterity of which the Chinese are no longer masters. They are, however, every now and then trying to recover the art of this magical painting; but to no purpose.

Be this as it will, we may at present say, that the beautiful azure appears again upon the porcelain, after having disappeared for some time. When it is first applied, it is of a palish black colour. When it is dry and has received the varnish, it is totally eclipsed, and the porcelain appears white. The colours are then buried under the varnish. The fire makes them blow, almost in the same manner, as the natural heat brings out the most beautiful butterflies with all their variety of colours. It is to be observed, that before the varnish is laid upon the porcelain, it is to be polished, and its irregularities removed. For this purpose they use a pencil made of very fine feathers, which they moisten a little with water, and pass every where with a gentle hand.

Besides, there is great art in the manner of laying the varnish on the porcelain, both in putting on a sufficient quantity, and spreading it equally on all parts. To very thin and slender porcelain they give, at two different times, two slight beds of varnish; for if these beds were too thick, the weak sides of the cup would not bear them, but bend immediately. These two beds are as good as an ordinary varnish, which they give the fine and strong china. They lay on the one by impression, and the other by immersion. At first they take the cup in one hand on the out-side, and holding it sloppingly over the urn where the varnish is, they with the other throw as much into it as is sufficient to varnish it every where. This is done successively to a vast number of cups. When they are dry within, they varnish the out-side in the following manner: they hold one hand on the cup, and supporting it with a small stick under the middle of its bottom, they plunge it into the vessel full of varnish, and immediately take it out.

'Tis to be remembered that the foot of the cup remains solid. In a word, it is not till it has received the varnish and becomes dry, that they put it upon the wheel to hollow the bottom, after which they paint upon it a small circle, and often a Chinese letter. When this painting is dry they varnish the cavity they have made under the cup; and this is the last hand put to it, since it is forthwith carried from the laboratory to the furnace to be baked.

It is surprising that a man should keep in an equilibrium upon his shoulders, two long and narrow planks on which the porcelain is ranged; and that he should thus pass thro' several very populous streets without breaking the ware. 'Tis true people avoid him carefully; for they would be obliged to repair the loss done. But it is astonishing that the porter himself should so well regulate his steps, and all the motions of his body, as to lose nothing of his equilibrium.

The place where the furnaces are, presents us with another scene. In a kind of area or entry before each furnace we see heaps of cases destined to contain the porcelain. Every piece of porcelain, however coarse, as well those which have lids, as those which have not, has its case. These lids are but weakly attached to the lower part in baking, and are easily disengaged by a small stroke which they give them. As for the small porcelain ware, such as tea and chocolate cups, they have a case common to many of them. The workman in this imitates nature, who, in order to concoct and mature fruits includes them under a common covering, that the heat of the sun may only penetrate them gradually; and that his internal action may not be too much interrupted by the external air during the cold damps of the night.

These

These cases have in the inside a kind of bed of sand, which is covered with the powder of Kaolin, that the sand may not adhere too much to the foot of the cup, which is placed upon this bed, after having pressed it and given it the figure of the porcelain, which does not touch the sides of the case. The mouth of the case has no covering. A second case of the figure of the first, furnished in like manner with porcelain, is so fitted into it, as to cover it intirely, without touching the porcelain below. In this manner they fill the furnace with large piles of earthen cases all furnished with porcelain. By means of those thick coverings, the beauty, and if we may use the expression, the complexion of the porcelain is not exhaled by the fire.

With respect to the small pieces of porcelain, which are contained in large round cases, each of which is placed upon a supporter of earth about the thickness of two crowns, and as wide as its foot. The bottoms of these are also covered with the powder of Kaolin. When these cases are large they put no porcelain in the middle, because it would be too far from the sides, by which means the case being destitute of due strength would break and fall down, which endangers the whole pile. We must observe that these cases are the third of a foot in height, and some of them are not bak'd no more than the porcelain. However, they intirely fill those which have been already baked, and are still fit for use.

We must not forget the manner in which the porcelain is put into these cases. The workman does not touch it immediately with his hands; for by that means he might either break it, or produce irregularities in it. He draws it from off the plate by means of a small cord. This cord is  
fixed

fixed at one end to two somewhat crooked branches of a fork of wood which he takes in one hand, while with the other he holds the two ends of the cord crossed and open, according to the bulk of the porcelain. In this manner he surrounds it, raises it gently, and places it on the small pedestal in the case. All this is done with incredible expedition.

We have already observed, that the bottom of the furnace was covered with a bed of gravel a foot and an half thick. This gravel is designed for the more securely placing the piles of porcelain, whose rows which are in the middle of the furnace are at least seven foot high. The two cases at the foot of each pile are empty, because the fire does not act sufficiently below, and because they are in some measure covered by the gravel: for the same reason the case placed at the top of the pile is left empty. In this manner they fill the whole furnace, leaving no vacuity, except at the place which is immediately under the vent.

In the middle of the furnace they place the piles of the finest porcelain. At the bottom such as are coarser; and at the entry such as are of a deeper colour, which are composed of an equal quantity of Petunse and Kaolin, and on which they have laid a varnish made of the stone which has spots a little black or red, because that oil has a stronger body than the other. All these piles are placed very near each other, and united below, above, and at the middle, with some pieces of earth which they apply to them, in such a manner, however, that the flame has a free passage to insinuate itself equally on all sides. This depends on the eye and dexterity of the workman, and is absolutely necessary to succeed in his attempt, and avoid certain accidents nearly

nearly similar to those which arise from obstructions in the animal body.

All earths are not proper for the cases which contain the porcelain. There are three sorts used. The one is yellow and very common. It is used in the greatest quantity, and constitutes the base. The other is called Lao-tu, that is, a strong earth. The third, which is an oleous earth, is called Yeou-tou. These two last earths are in the winter time taken from very deep mines, where it is not possible to work during the summer. If they were mixed in equal quantities, which would cost a little more, the cases would last longer. They bring these earths, ready prepared, from a large village at the foot of the river, about a league from King-te-tchin. Before they are bak'd they are yellowish, but when baked they are of a dark red colour. As the workers are very sparing they put in most of the yellow earth, which is the reason why the cases do not last above two or three bakings, after which they split altogether. If they are but slightly split, they tie them round with a band of osiers; the band is burnt, but the case serves for that time without doing any harm to the porcelain. They must not fill a furnace with new cases which have not been used before. The half of them must be such as have been baked before. These are placed at top and at bottom. In the middle of the piles they place such as are new-made. Formerly, according to the history of Fou-lean, all the cases were bak'd separately in a furnace, before they were used for baking the porcelain, no doubt, because at that time they had less regard to the expence than to the perfection of the work. It is not so at present, because the workers in porcelain are multiplied to an incredible number.

We shall now consider the structure of the furnaces. They are placed at the bottom of a pretty long entry, which serves as a bellows to them, and is of the same use as the arch of the glass-founders. The furnaces are, at present, larger than they were some ages ago, since in former times, according to the Chinese book, they were only six foot in height and breadth. At present they are two fathoms high, and almost four fathoms broad. The arch, as well as the body of the furnace, is pretty thick, that they may be able to walk upon it without being incommoded by the fire. This arch, in the inside, is neither flat nor formed into a point, but runs slanting, and grows narrower in proportion as it approaches the great vent, which is at the extremity, and thro' which the flames and smoke are discharged. Besides this vent the furnace has in its top five small apertures, which are, as it were, the eyes of it. They cover them with some broken pots, in such a manner however, that they assist the air and fire of the furnace. 'Tis by these eyes that they judge whether the porcelain is baked. They uncover the eye which is a little before the great vent, and with an iron tong open one of the cases. The porcelain is enough baked, when there is a clear fire in the furnace, when all the cases are red hot, and when the colours are clear and bright. Then they discontinue the fire and close up the door of the furnace for some time. The furnace has a deep fire all over it. They pass over a plank into the cavity of the furnace, in order to range the porcelain. When they have kindled the fire they forthwith shut the door, leaving in it an aperture necessary to throw in pieces of wood, a foot long but very small. They first heat the furnace for a day

day and a night. Then two men, who relieve each other, constantly throw wood into it. For one baking they generally burn fourscore loads. To judge of this matter, by what the Chinese book says, that quantity cannot be sufficient. In it we are assured that they burned two hundred and forty loads for this purpose, and twenty more if the weather was rainy, tho' at that time the furnaces were smaller by one half, than those us'd at present. They at first kept up a gentle fire in them for seven days and seven nights, and on the eighth day they made a very strong fire. It is to be observed, that at this time the cases of the small porcelain were baked apart, before they were put into the furnace. It must also be owned, that the ancient porcelain had more substance than the modern.

The old workers also observed one thing which is neglected at present. When there was no more fire in the furnace, they did not open the door till after ten days for large porcelain, nor till after five days for the small. At present indeed they delay opening the door and taking out the large porcelain for some days; for without this precaution they would split. But for the small, if the fire has been extinguished in the evening, they take them out the next day. The design is probably to spare wood for the next baking. As the porcelain is excessively hot, the workman, in order to lay hold of it, uses long slings hung about his neck.

After having in one day burnt a hundred and fourscore loads of wood in the entry of the furnace, it is surprising that the next day no ashes should be found. They who attend these furnaces must be well accustomed to the fire. 'Tis said they put salt into their tea, that they may drink



as much of it as they please, without being the worse. But it is easy to comprehend how this salted liquor allays their thirst.

After what has been said, it is not surprising that porcelain should be so dear in Europe. It is also to be observed, that besides the great gain of the European merchants, and that which their Chinese commissioners make of them, it is rare that a baking succeeds intirely; that often the whole is lost, and that on opening the furnace they find the porcelains and cases reduced to a mass as hard as a rock; and too great a fire, or ill-tempered cases, may destroy the whole; that it is not easy to regulate the fire which ought to be applied; that the nature of the weather instantaneously changes the action of the fire, the quality of the subject on which it acts, and that of the wood which supports it. Thus for one workman who becomes rich, there are an hundred others who ruin themselves, and tempt fortune, from the hopes they have of amassing wherewithall to set up a merchant's shop.

Besides, the porcelain transported into Europe is almost all made upon new models, which are often whimsical, and in which it is difficult to succeed. Provided it has but the smallest fault it is disliked by the Europeans, who will have nothing but what is perfect; for this reason it remains in the hands of the workmen, who cannot sell it to the Chinese, because it is not agreeable to their taste: it is therefore necessary, that the pieces sold should defray the expence of such as are rejected.

According to the history of King-te-tchin, the gain formerly arising from porcelain was much greater than at present. This can hardly be believed; for there was not at that time so great a vent for porcelain

certain in Europe. This happens because the living is at present dearer than before ; because the wood in the neighbouring mountains being exhausted, they are obliged to bring it a great way, and at a vast expence ; because the profit is divided among so many different persons ; and lastly, because the workmen are less skilful than they were in former times, and consequently less sure in succeeding. This may also proceed from the avarice of the mandarins, who employing a great many workmen, make rich presents to their protectors at court, and pay the labourers ill, which are sufficient reasons why the merchandize should be dear, and the merchant poor.

The difficulty of imitating certain models sent from Europe, is one of the circumstances which augment the price of porcelain ; for all the workmen cannot labour upon all the models sent from foreign countries. Some of them are impossible to be imitated in China, just as some of their work surprize strangers, and are thought impossible to be done. The following are some examples of this. We there see a large porcelain lanthorn, thro' which a flambeau enlightens a whole room. This work had been bespoke by the hereditary prince, who also bespoke several musical instruments, and among the rest a kind of small organ called T-feng, which is near a foot high, and composed of fourteen pipes, whose melody is very agreeable. They also succeed perfectly in flutes, flagelots, and another instrument called Yun-lo, which is composed of several small round and somewhat concave plates, each of which has a particular sound. They suspend nine of them in a square which corresponds to different stages, which are touched with sticks like the drum.

There

There is a small chime which agrees with the sound of other instruments, and the voice of musicians. It is necessary, they say, to make a great many experiments, in order to discover the thickness and the degree of baking proper for the tones necessary for harmony. We may perhaps imagine, that the Chinese have for this purpose the secret of incorporating a little metal in the body of these porcelains to vary their sounds. But metal is so little capable of being united with porcelain, that if a copper farthing was put on the top of a pile of porcelain placed in the furnace, this farthing being melted, would penetrate all the cases and all the porcelains of the pile, so that each of them would have a hole in its bottom. Nothing better shews what motion the fire gives to every thing included in the furnace; for the workmen assure us, that every thing there is, as it were, fluid and fluctuating.

To return to such of the Chinese works as are curious, they succeed principally in grotesque pieces and the figures of animals. The workmen make ducks and tortoises which float upon the water. They make cats painted in the natural manner, which upon their head carry a small lamp, the flame of which forms the two eyes of the animal. By this means the rats are frightened in the night time. They also make a great many statues of Kouan-in, a goddess celebrated in China. They represent her holding an infant in her arms, and she is invoc'd by barren women who want to have children. She may be compared to the antique statues which we have of Venus and Diana, with this difference, that the statues of Kouan-in are very modest.

There is another kind of porcelain, the making of which is very difficult, so that it is very uncommon. The body of this porcelain is extremely

ly thin, and its surface very even, both within and without. It has mouldings however in it, groupes of flowers, for example, and other similar ornaments. It is made in the following manner: when it is taken off the wheel, they put it on a mould on which the figures are engraved, and these are imprinted on the inside. Externally they render it as fine and smooth as possible, working it with the chissel, after which they varnish it and bake it in the ordinary furnace.

The European merchants sometimes desire the Chinese workmen to give them plates of china for tables, the seats of chairs, or the frames of pictures: but these cannot be had. The largest and longest plates are about a foot square. If they are made larger, let them be as thick as they will, they warp. For this reason, instead of making these plates thick, they make them with two surfaces which they unite, leaving the inside hollow. In the two sides they make two apertures, to enchase them in joyners work or in the backs of chairs, where they make an agreeable appearance.

The history of King-te-tchin speaks of several works ordered by the emperors, which they in vain attempted to make. The grandfather of this present emperor bespoke urns almost of the same figure with those pots in which we put orange-trees. These urns he wanted to contain small red, gold, and silver-coloured fish, which are accounted curiosities. Perhaps he also intended to bath in these vessels; for they were to have been three feet and an half in diameter, and two feet and an half high. The bottom was to have been half a foot thick; and the sides were to have been the third of a foot in thickness. The workmen laboured three years successively at these vessels, and made two hundred, none of which succeed-

ed. The same emperor ordered plates for the porch of an open gallery. Every plate was to be three feet high, two feet and an half broad, and half a foot thick. All these things, say the annals of King-te-tchin, could not be made, for which reason the mandarines of that province petitioned the emperor to have the work discontinued.

As every profession has its idol; and as divinity is there as easily communicated as the quality of count or marquis in Europe, it is not surprizing that there should be a god of porcelain. The Poufa, which is the name of this idol, owes its origin to these designs which the workmen cannot execute. 'Tis said that formerly an emperor would absolutely have porcelain upon a model which he gave. It was several times represented to him, that the thing was impossible; but all these remonstrances only served to excite his curiosity. The emperors, during their lives, are the most formidable deities in China, and they often believe that nothing ought to oppose their desires. The officers therefore redoubled their care, and used all manner of rigour to the workmen. These unfortunate creatures spent their money, took a great deal of trouble, and only received blows. One of them in a fit of despair, threw himself into a burning furnace, and was consumed in an instant. The porcelain, as is said, baked in that furnace, came out perfectly beautiful, and agreeable to the taste of the emperor, who demanded no more since that time. That unfortunate man pass'd for a hero, and afterwards became the idol which presides over works of porcelain.

As porcelain has been in great esteem for so many ages, perhaps the reader may want to know wherein that of former times differs from the present, and what the judgment of the Chinese

nese is in this particular. It is not to be doubted but China has its antiquaries, who are prepossessed in favour of their ancient works. Tho' the Chinese are certainly admirers of antiquity, yet some of them stand up in defence of the modern work. But the porcelain does not, like old medals, give us an acquaintance with remote times. The old porcelain may be adorned with some Chinese characters, which, however, denote no point of history; so that the curious find nothing in it but the taste and colours to make them prefer it to that of the present days. 'Tis said in Europe that porcelain must be long buried in the earth, before it arrives at its perfection. This is a false opinion, at which the Chinese laugh. The history of King-tetchin, speaking of the most beautiful porcelain of former times, says, that it was so much sought after, that the furnace was hardly opened, till the merchants were disputing with each other who should have the first parcel. This by no means supposes that it was buried in the earth.

'Tis true, in digging in the ruins of old buildings, and especially in cleaning old wells, there are sometimes beautiful pieces of china found, which have been hid during revolutions in the state. This porcelain is beautiful, because the natives only hid what was valuable, that they might find it again, when the troubles were at an end. If it is esteemed, it is not because it has acquired any new degree of beauty in the earth, but because it has retained its ancient beauty; and this alone is of great importance in China, where they give large sums for the smallest vessels, which were used under the emperors Yan and Chun, who reigned many ages before the dynasty of Tang, at which time porcelain began to be used by the emperors. All that porcelain acquires by lying long in the earth, is

some change in its colouring or complexion, which shews that it is old. The same happens to marble and ivory, but more speedily, because the varnish hinders the moisture from insinuating itself so easily into the porcelain.

According to the annals of King-te-tchin, there were formerly urns sold at fifty-eight or fifty-nine taels, which amount to more than eighty crowns. What an immense sum must these have been worth in Europe? The book says, that there was a furnace built on purpose for each of these urns, and that no expence was spared on them.

Certain mandarins, to their protectors at court make presents of old porcelain, which they have the talent of making themselves; that is, they have found the art of imitating ancient porcelain, or at least such as is pretty old. The matter of these false Kou-tongs, or counterfeit antiques, is a yellow earth found near King-te-tchin. A plate of this earth weighs as much as ten porcelain ones of the same size. There is nothing particular in making this kind of porcelain, if not that they give it a varnish made of yellow stone mixed with ordinary oil, which prevails most in the composition. This mixture gives the porcelain a sea-green colour. When it is baked, they throw it into a very rich broth of fowls and other victuals, in which it is boil'd. After this they put it into the filthiest sink they can find, and there leave it a month or more. When it comes out of this sink it passes for three or four hundred years old, or at least, as old as the dynasty of Ming, when the porcelain of this colour and thickness was much esteemed at court. These spurious antiques likewise resemble the genuine ones in this, that when they are struck, they do not sound, and when they are applied to the ear, they produce no hum-

The natives of China are almost as curious about glasses and crystals which come from Europe, as the Europeans are of the Chinese porcelains: but whatever esteem the Chinese have for our commodities of this kind, they do not cross the seas for European glasses, finding their own porcelain of more use, because it bears hot liquors. A person may hold a cup of boiling tea without burning himself, if he knows how to take it in the Chinese manner; which cannot be done with a silver cup of the same thickness and size. Porcelain has its splendor as well as glass, and the less transparent, the less brittle it is. What happens to newly-made glass, also happens to porcelain, which excellently denotes a nearly similar constitution of parts. Good porcelain has a clear sound like glass; and if glass is cut with a diamond, this last is also used for joining pieces of broken porcelain; and this constitutes a particular trade in China. The natives use a diamond like a needle to make small holes in the body of the porcelain, thro' which they put a slender piece of tin wire; and by that means render the porcelain fit for use, when at the same time the place where it was broken is hardly observable.



## C H A P. V.

*Whether the traditions of China derive their origin from Egypt. Whether the conquests of Sesostris have been carried as far as China. The difference of the Egyptian hieroglyphics and the Chinese characters. Whether there are slaves in China. The origin of the famous festival of lanthorns. Cause of the frequent famines and burnings in China.*

SOME assert that most of the Chinese traditions derive their origin from Egypt; and found their assertion on the history which informs us that Sesostris subdued the nations on the other side the Ganges, and advanced as far as the main ocean; that he might therefore have gone to China, and have established some colonies there; and that this conjecture may be confirmed, by an enumeration of several Chinese customs, almost entirely conformable to those of the Egyptians.

The historical facts which seem to destroy this conjecture are briefly those: Sesostris the conqueror reigned about fifteen centuries before Christ. It appears pretty certain that he waged war against the Assyrians and Scythians, and that he subdued Phœnicia, Syria, and almost all Asia Minor. The Greek historians inform us, that he was not nine years absent from his states, and that he interrupted his conquests in order to return to them, because his brother Armais, to whom he had entrusted the government, wanted to take possession of the throne. But is it equally certain that he carried his conquests as far as the Ganges, and that he there subdued the nations, which he could not do till after the

the expeditions we have related ; that from the Ganges he passed to China, there established colonies, and erected pillars as monuments of his victories, as we are told he every where did, and afterwards returned to Egypt to expel his brother ? If all this is not impossible, it is at least very hard to be believed ; for at that time the passage from the Indies to China, was much more impracticable than it is at present, especially for an army. It is very uncertain whether the towns of Bochara and Samarcand, so useful to the caravans, existed at that time ; and whether there were other similar places of refreshment for merchants and travellers.

Perhaps it may be said, that Sesostris only sent a detachment of his army into China, to inform themselves of the nature of the country, and the character of the inhabitants. But at that time, and even before, the entry of China was forbidden to all strangers, except ambassadors, who were only admitted with a small retinue. The Chinese treated them well, made presents to them, and sent them back to their frontiers, attended by a crowd of people, without suffering any of them to remain in China, or settle in it ; and this custom is still observed to all people.

Shall we say that Sesostris, whom nothing resisted, and who thought himself master of the world, humbled himself so far as to send an ambassador to China, supposing he knew it ? Would he not rather have formed a design of entering it as a conqueror ; and would he not have imagined that the Chinese would give him as little trouble as the Indians ? Of this we have not a word in the Chinese history, tho' it speaks of the irruptions which have been made by some more neighbouring nations, among whom there might be some Egyptians.

tians casually mixed. It is probable, that at this time the Egyptians and Chinese had no knowledge of each other; and that each of these two nations thought its own empire the first, or rather the only one in the world.

The similar customs of the two nations are only probabilities, which when compared seem to destroy each other.

We see, say some people, hieroglyphics in both nations. There is the same division of tribes in China as in Egypt, the same attachment to ancient customs, the same respect to parents and old people, and the same love for the sciences, especially astronomy. The festival of lanthorns in China, that of lamps in Egypt, the metempsychosis, and perhaps the perpetuity of trades, say they, are all circumstances which prove a communication between these two empires.

It must be confessed that this parallel is at first view somewhat striking. and favours the communication now mentioned. However, if we examine matters narrowly and circumstantially, we shall find that it does not prove the point intended. Let us begin with the hieroglyphics.

These, according to the two Greek words of which the name is compounded, signify no more than certain sacred symbols or figures, by which the Egyptians used to represent the tenets of their religion and morality. These were admired and greatly extolled by the Greeks. In imitation of the Greeks, many Europeans seeing them engraved on beautiful pillars, have the more easily believed, that there was some latent mystery in them which they could not comprehend.

If, in these days when China was not known, we had accidentally got an inscription in Chinese characters, perhaps these characters would have  
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been equally admir'd, and some one or other of the literati, a set of men who pretend to be ignorant of nothing, would have given a description of it in his own manner.

Were the hieroglyphics of Egypt immoveable? Was the meaning represented by them so fix'd that it could not be changed, but always signified the same thing? Were there no hieroglyphics but for the mysteries of religion? Were there not also some appropriated to ordinary uses? When did the Egyptians begin to have them? These are all questions of which we are ignorant, but which yet ought to be known, before we can tell which of these two nations had the advantage of the discoveries of the other.

The Chinese characters are but improperly hieroglyphics, and have not been instituted for religious more than other uses. They are arbitrary signs, which give us the idea of a thing, not by any relation they have with the thing signified, but because it was intended that such a sign should signify such a thing, without any regard to the sound; so that the different nations who afterwards used the Chinese characters, as the Japonese, the Coreans, and the Tongkinese, read them with the sounds of their own particular languages, and affix the same ideas to them as the Chinese do.

These signs are so arbitrary, that often their number of strokes may be changed, and their external configuration altered, without producing any variation in the meaning and idea affix'd to them. Is this the case with the hieroglyphics of the Egyptians? Do the neighbouring nations use them? Had they any of them for all the uses of civil life? Could the same hieroglyphic have different senses according as it was differently used in discourse, as happens to the Chinese characters?

The

The Chinese characters were invented by Tsang-kiai, who lived two thousand years before Christ. Did the Egyptian hieroglyphics subsist at this time? The only conjecture we can draw from circumstances, is that the Egyptians and Chinese having laid the foundations of two great monarchies, must have had occasion for signs and characters to write their laws and govern the people, and that each monarchy must have invented some of its own. It was not necessary for this purpose that they should communicate with each other. Do we not often see new inventions appear, almost at the same time, in different parts of Europe?

As for the perpetuity of trades, it never took place in China. On the contrary, there are very few Chinese who like to learn the trades of their fathers, and never any thing but necessity constrains them to it. As soon as they are masters of a little money, they commence merchants, and some of them even attempt to become petty mandarins.

Neither ought the metempsychosis to enter into the parallel, since it is a doctrine of later times, which has always been unknown in China; and when attempts have been made to introduce it, it has constantly been rejected and anathematized, as a kind of pestilence imported from the Indies. The learned Chinese have wrote numberless books against the abettors of this doctrine, which however has spread considerably, especially among the vulgar. We every where see nothing but bonzes and pagods, which the present emperor has multiplied still more than his predecessors.

Let us proceed to the slaves or tribes said to be at China. The following are the only circumstances which could give rise to this error.

There are in China persons who are infamous, not originally, but by the profession they exercise.  
These

These cannot be received as mandarins, and the people contract no alliances with them ; such are the comedians who play upon the public theatres ; the ministers of debauchery ; the corrupters of youth ; jailors ; and those who in courts bastinate criminals, when the sentence of the judge orders it. These people are not particular cantons. 'Tis misery, and not birth, which engages them in these shameful professions, and their descendants may forsake them, when they have wherewithal to live honourably.

There is still another kind of infamous people, whom they call To-min. These are only found in the province of Tchekiang, especially in the town of Chao-hing, where they are obliged to live in a street by themselves. They are only permitted to carry on the lowest and most ignoble kind of business, such as that of selling frogs and sugar'd cakes to children, and playing on the trumpet before the dead, when they are carried to the grave. They are precluded from going to examinations, in order to take any higher degrees. When hard tasks are imposed on the people of the town, they make these poor creatures perform them, because every one has a right to use them ill with impunity. None of the rest of the people contract alliances with them. Their wives have particular marks on their stalls to distinguish them from others. They are the only persons who treat of marriages, and have access to the ladies who have either sons or daughters to dispose of in marriage. They accompany the spouse when she goes to the husband's house. On this occasion they gain more or less in proportion to their dexterity in concealing from the two parties (who never see each other till the wedding-day) these faults which are not perceived at first sight.

'Tis

'Tis true, that in all this there is some appearance of slavery, and people have been so much the more easily deceived in this respect, because the Christians of that city will not admit to baptism the To-min, whom they look upon as an infamous set of people, and with whom they will have no conversation. However, there is no absolute slavery in this, if we will but be at the pains to examine into the origin of this matter; for all agree, and even the inhabitants of the town of Koo-hing, that these To-min are the descendants of the principal nobility who lived near the end of the dynasty of the Songs, whom the Guers destroy'd; and because these nobility gave the conquerors the greatest trouble, and refus'd subjection, such of them as survived the slaughter were condemn'd to live in Chao-hing, and in the mortifying state in which they have remained since the beginning of the reign of Yong-tching, who in a declaration which he made against so odious a statute, decreed, that the To-min should be looked upon as his other subjects; that they might be examined and take degrees, in order to enjoy places, if any of them were capable of so doing.

This order was published every where, and met with no opposition except from the literati of Chao-hing, who cruelly made a part of their glory to consist in the oppression of these miserable creatures. They opposed the favour which was to be shewn them, and went in a tumultuous manner to make their complaints to the governor of the town, who found himself in great perplexity; for when there is a mutiny among the people, the governor is sure to be divested of his authority, as a man who wants abilities to govern. He was upon his guard, however, and hit upon a stratagem which succeeded. He summoned the chiefs of the To-min before his

his tribunal, and in magnificent terms represented to them the clemency of the emperor, and then added of his own accord, that there were conditions annexed to this bounty, the first of which was, that they should no longer exercise their ordinary profession. Upon this the poor creatures cried out, that in order to honour them they wanted to make them die of hunger ; since they had no other means of subsisting. Difficulties were started on each side, and both separated without coming to any conclusion. After this the richer sort of the To-min quitted Chao-hing, and settled elsewhere. Some of them came to Peking and bore offices. The rest gradually delivered themselves from this slavery,

Another class of people, whom they call Kankia, is not much less contemptible. These are the men who from the provinces bring to the capital, barks loaded with rice for the imperial magazines. The emperors Yuen first made this canal to transport rice and other things by water for the service of the court. They looked upon the management of these barks as a hard and laborious employment, and therefore subjected those to it, who for personal crimes had been condemn'd to banishment. Some were made captains of the barks, and others common sailors. They put them into these barks with their whole families, and they have no other house, whether the bark sails or lies at anchor. They are furnished with rice and every thing necessary for their subsistence. Many of them became rich, because without paying either freight or duty, they put into their barks a great many commodities on their own account which they sold at Peking. This practice lasted till it was prohibited to take on board, either for themselves or others, above an hundred weight, the custom of which



which they paid three or four times before they arrived at Peking. Thus the favour granted to them as well as the others, of being examined, costs them dear, because being poorer than before, they cannot support their children till they obtain some degree.

This is, no doubt, what has given occasion to say that there were classes of slaves in China: but if it was so, we might in like manner say that persons condemned to the galleys, or to exile, constitute particular bodies of slaves. The rest of the Chinese have always been divided into men of letters, soldiers, merchants, and tradesmen, as in other countries.

We now come to consider the feast of lanthorns, so famous in China, and which may be compared with that held at Sais, from which it seems to have derived its origin; for the Chinese feast is much more recent, at least in point of fame, than that of Egypt recorded by Herodotus. The feast of lanthorns was instituted to congratulate the emperors, and afford the people a spectacle in the beginning of each year. A Chinese author speaks of it in the following manner:

Under the emperor Youi-tong of the dynasty of Tang, a certain man whose name was Poto ask'd leave to light a hundred thousand lanthorns in the night, on the 15th of the first moon. The emperor came out of his palace to be witness to the spectacle; and that the people might have the same diversion, he ordered that the ports should not be shut the whole night, and declared that every one might walk thro' all the streets without any fear of being arrested. In the same book it is said, that in the Year of Christ 950, the empire being in a profound peace and the crop plentiful, the emperor decreed that the feast should last till the

18th of the same month, in order to divert the literati and the people ; but after him these diversions were reduced to three days. This feast is accompanied with several pieces of fire-works.

The same author adds, that under the dynasty of the Ycheou, they lighted lamps at the sacrifices offered to the Chan-bi, and that in the dynasty of Han when the sect of To had penetrated into the palace of the emperor, this prince ordered lanthorns to be lighted, to render it more famous.

There is another book which says, that under the dynasty of the Tcheou, which lasted more than eight centuries, an emperor whose name is not mentioned, on the 13th of the first moon permitted people to come abroad into the streets in the night ; that is to say, continues the author, they lighted lanthorns.

This is all we find concerning the feast of lanthorns. Tho' it is very old at China, it nevertheless appears that it has not been celebrated under Youi-tsong. Let the world after this judge whether the Chinese or Egyptians had this feast first.

As for the other resemblances found between the two nations ; such as their inviolable attachment to ancient customs, the respect paid to parents, the laws, and old people, the love of arts and sciences ; we may reasonably think of them in the following manner :

Before the dispersion of the nations, the three sons of Noah, Shem, Ham, and Japheth, had learnt from their father, at least by verbal instruction, what related to the sciences, and the doctrine of morals, not to mention the knowledge they might receive before the deluge from those who were elder, since they were married before they entered into the ark. Noah, no doubt, continued

tinued to instruct them. If he had inclined to favour one more than another, he would not have made choice of Cham, that wicked and accursed son from whom the Egyptians sprung, but rather of Shem and Japheth, who were blessed of the Lord. This last and his descendants soon forgot the instructions they received ; but it was not so with the descendants of Shem who peopled China. They soon formed a great empire, which they attempted to govern as if it had been a single family. This was the means of perpetuating the important rules relating to morality and the other sciences, which they had received from their ancestors.

The Egyptians were also among the first, or if we can believe them, absolutely the first who formed an empire and cultivated the sciences. They succeeded better than the Chinese, because, perhaps, they had finer geniuses and greater application to study. But after all, it may be said, that the Egyptians and Chinese, without having any communication since their separation, resemble each other in a great many things, each having improved their stock drawn from the same source, according to their diversity of genius, which is generally very different among brothers, and still more among their descendants.

But it is astonishing that people should compare the Chinese with the Egyptians, in point of their respect to their parents and old people. These last must therefore have had a great horror at offences committed against their parents. The difference at present between these two nations, is, that in one this love of parents is almost extinct, whereas in the other it subsists in full force. What is now become of the Egyptians? Where are their laws, their sciences, and customs? Nothing  
now

now remains of their grandeur, but some ruins and some shattered pillars with their inscriptions. Their conquerors have destroyed every thing, because their kingdom was neither large nor populous enough to stop the course of their conquests.

China, for a quite contrary reason, being several times conquered, has reduced its conquerors, by subjecting them to its own customs, and has so changed them, that in a short time they were no longer known for strangers. The conquerors of this nation have never been able to alter either its character or language. They have not so much as had it in their power to introduce their own languages into the cities where they held their courts. In a word, their descendants are become Chinese.

The dynasties of the Kin and the Yuen are sensible proofs of this, which is also confirmed by the Tartarian Mantcheous who are still upon the throne. They have only been able to change the form of the habits, and make their subjects cut off their hair. Every thing else subsists in its former state, and tho' it is not much above a hundred years since they became masters of China, they are already Chinese in their morals, customs and appearances. Nothing is spoken but Chinese in Peking, and in the houses of the Mantcheous. They are even obliged to send their children to school to learn to read and write the Tartar language, that they may have places in the judicatories where both languages are used; and in the provinces no one can speak the Mantcheu language.

But from which of the sons of Shem did the Chinese derive their origin? 'Tis highly probable that it was from Jectan, the younger brother of Phaleg, both the sons of Heber. This opinion is supported by the following reasons.

First, the scripture after the enumeration of the thirteen children of Jectan, says \* “ And their dwelling was from Mesha, as thou goest unto Sephar, a mountain of the east.” The country which they inhabited extended from the skirts of Mesha as far as Sephar, which is a mountain lying in the east. Mount Sephar is in Arabia, as is generally granted. It is by no means one of these mountains which form mount Imaus, whose southern extremity in the Thibet is called Cantissas. Another part whence Ganges takes its source is called Lanquer. The northern parts as far as Tartary are called Belgians, and at present Althai. These are the passages to China, which were not known to Jectan. These names are posterior to those who first inhabited the mountains.

The second reason is, that the emperor Yao is also by the Chinese called Yao-tang, a name which very much resembles Jectan, by whom, or his children, China most certainly was peopled.

But from which ever of the sons of Shem the Chinese are descended, it is plain that on entering China, they shut the doors behind them, and have ever since been very careful not to open them, except to foreign ambassadors. It is surprising that their neighbours on the east from Thibet in going north as far as Chamo, who are also the descendants of Shem, should be so different from the Chinese in dispositions, language, features of the face, and shape of the body.

The Tartars are brutal, ignorant and deceitful, three very bad qualities, but rare among the Chinese. When any of them come to Peking, if a person asks the Chinese whence this difference proceeds, they answer chont-ton cache; that is, from fire and

and water, or from the nature of the country which produces this change both in the body and mind of its inhabitants.

We shall now speak of the famines so frequent at China. How can it be, some may say, that a laborious, sober, and industrious people, living in the most beautiful and fertile country in the world, and governed by the wisest princes, should be so often subject to famines, while we see barren countries inhabited by people who want many of these advantages, which rarely or never feel the shocks of famine?

To answer this objection, it will be sufficient to make the following observations. In a time of famine China can receive no assistance from her neighbours, but is on the contrary obliged to supply them. Beginning at the province of Yun-nan, and passing to the north thro' the provinces of Koertcheou, Se-tchuen, and Chenfi, as far as the great wall, we find nothing but dreadful mountains, inhabited for the most part by savages, who have their own chiefs and laws, and speak a different language. They often make incursions into the low countries, and lay vast tracks of it desolate, but have never yet been subdued.

To the north of China are the Mongals, a nation indeed subjected to China, but naturally so lazy, that they only sow millet for their own support. Their flocks supply them with their other food.

To the north-east is the province of Leao-tong. It is very fertile, but so far distant from Peking, that its produce cannot be easily transported thither, and this is even impracticable in the winter season.

Corea furnishes no grains to China. The provinces of Kiang-naro and Tche-kiang have the sea

On the east, and are three or four days journey distant from Japan. However, none of their vessels go thither for provisions, either because Japan is already so populous that it has none to spare, or because after its gates are shut, they would be exposed to too many dangers.

The province of Foukien on the south, borders on the sea, and opposite to it is the island of Formosa, of which only a part belongs to China, which must supply it with provisions, when it suffers famine.

The province of Quang-tong has nothing on the south, but the sea, and uncultivated land; so that in running thro' all the provinces of China, we must see, that she herself is obliged to support her numberless crowd of inhabitants.

When the crop fails in one province, or one part of a province, by drought, or some sudden inundation, the great mandarins have recourse to the public granaries, but finding them empty, they draw informations, tho' very unwillingly, because they carry bad news. These informations or memorials, when sent to Peking, pass thro' many hands, so that they do not reach the emperor till after some days. He then orders the grandees to assemble, and deliberate on the means of relieving the misery of the distressed. On this occasion he makes very fine speeches, after which the court comes to a resolution. They nominate mandarins to go to the relief of the afflicted provinces. If dispatch is required they furnish them with post-horses and bear their expences. If they get no horses, they go at their own expence, in which case they demand time to prepare for their departure. After a great many delays, they set out; but the distressed may die of hunger before they receive any succour.

If the public granaries are often empty, this happens, because the great mandarins who have the care of them, entrust the keeping of them to true harpies, who are like hungry wolves guarding a sheep-fold. These villains use a thousand artifices to rob and plunder, by which means a famine happens. The public granaries are almost entirely pillaged. The mandarins and subaltern officers are punished ; but this does not remedy the present evil. The people wait hope, and die without relief.

The second cause of famine is, that they do not manage their grains well, but consume great quantities of them in making wine, aqua-vitæ and arrack.

The famine is not the only inconveniency attending this preparation of arrack. It is also the most common cause of the frequent conflagrations which happen in the cities of china, and especially in Peking. The Chinese neither drink wine nor arrack, till they have warmed them. They use these liquors, especially at night when going to bed, especially merchants, tradesmen, and soldiers. Every one has in his bed-chamber a furnace with a fire of charcoal, with which they boil their rice and tea, and at the same warm the alcove of bricks in which they lie. On the same furnace they warm this sort of drink, eating salted herbs with it, so that they get themselves intoxicated at a small expence. If thro' carelessness, or intoxication, they let any of the arrack fall on the fire, the flame soon reaches the roof, which is only made of osier matts, or of paper, and is no more than three or four feet higher than a man's head. On this occasion the whole chamber is instantly on fire ; and because the shops where the merchants lie, and most of the other houses are not separated



from each other by thick walls ; and because the beams are often fastened together, the fire spreads with rapidity, and does great damage before it can be extinguished.

## C H A P. VI.

*Character of the Chiriguanes, disposition of their towns, their ornaments, their apparel, marriages, customs at the birth of their children, their ceremonies with the dead, their opinion concerning the state of the soul, when separated from the body.*

THE towns of the people of South America are disposed in form of a circle, in the center of which is the capital. They are very subject to get intoxicated by a very strong liquor which their women prepare. They acknowledge no deity. When they are in their own houses they often go quite naked. They have, however, coverings of leather, which they most generally carry on their arms. When they travel they put on this covering to defend themselves from thorns, of which their forests are full.

Their women only cover themselves with some old rags, which hang down from their waste to their knees. Their hair is long and beautiful. On their heads they wear a kind of crown, which has a pretty good air. They generally paint their faces of a fire colour, and all the rest of their bodies, when there is any feast where they are to get drunk. The men only mark some lines of the  
same

same colour on their faces, to which they add some large black strokes. When both men and women are painted in this manner they have a terrible air. The women pierce their inferior lip, and hang to it a small cylinder of brass, silver, or transparent resin.

Boys and girls have not the least clothing till they are twelve years old, and this custom is universally established thro' all South-America. Their arms are spears, bows and arrows, which the women manage as dexterously as the men.

Their marriages, if they may be so call'd, have nothing certain. A husband quits his wife when he pleases. Hence it is that they have children in almost all the towns. In some they marry for two years, after which they go and marry in another.

The pretended marriage is made without much ceremony. When a man wants a woman for his wife, he endeavours to gain her affection, he regales her for some time with fruits of his own growth, and with fowls he has taken in hunting, after which he lays a bundle of wood before her door. If she takes it in, the marriage is concluded, but if she does not, he must seek for another.

They have no other physicians than one or two of the oldest men in the town. The whole knowledge of these pretended physicians consists in whistling round the patient to banish the disease.

When a girl arrives at a certain age they oblige her to remain in her hamock, which they suspend at the end of the cottage. The second month they lower the hamock half way, and the third month old women enter the cottage armed with batons. They run up and down striking every thing they find, and pursuing, as they say, the snake which stung the girl, till at last one of them

concludes this farce-by saying that she has killed the snake.

When a woman brings a child into the world, it is customary for the husband to observe so rigid an abstinence for three or four days, that he is not so much as permitted to drink. They do not abandon their dead, as the other barbarous nations do. When any of their family dies they put him in an earthen vessel proportioned to the bulk of the carcass, and inter him near their own cottage. For this reason, all round these cottages we see heaps of earth raised in proportion to the number of vessels which have been interr'd in them.

The women bewail the dead thrice a day, in the morning, at noon, and in the evening. This ceremony lasts for several months, or as long as they please. This sort of lamentation begins as soon as the disease is thought dangerous. Three or four women surround the patient's bed, and utter the most dreadful cries and howlings. The patient would rather have his head broke than not be bewailed in this manner; for if they failed in performing this ceremony, it would be an infallible sign that he is not beloved. They believe the immortality of the soul, without knowing what becomes of it after its separation from the body. They imagine that it wanders up and down in the woods round their towns, where they go to seek it every morning, till not finding it they desist from their useless labour.

They draw bad omens from the song of certain birds, especially of one of a cineritious colour, which is no larger than a sparrow. If, after they are set out on a journey, they hear it sing, they go no farther, but return home directly.

The magicians and sorcerers who make fortunes among the other savages, are among them abhor'd and look'd upon as publick pests.

## C H A P. VII.

*Of the isle of Tsong-ming; the fruits which grow in it; the method of cultivating the rice; the crop of cotton, how it is prepared; a particular kind of earth whence they take their salt; the manner of obtaining this salt from the earth; the character of these islanders.*

THE island of Tsong-ming in the province of Nanking, from which it is only separated towards the west by a branch of the sea, not more than five or six leagues broad, is situated in the thirty-third degree of north latitude.

The manner in which this island began to be peopled, is not very much to its honour. It was formerly a savage and desert country, all covered with briars. They sent thither all the robbers and profligate wretches, of whom they wanted to purge the empire. The first people sent thither were obliged either to die of hunger, or to draw their aliments from the bosom of the earth. The desire of living rendered them active and industrious. They improved this uncultivated land, tore up the useless plants, and sowing the few grains they had brought with them, they were not long before they reaped the fruit of their labours. In a few years a great part of the ground which they had cultivated became so fertile, that it furnished them with plenty of necessaries.

This induced some Chinese families, who could hardly subsist on the continent, to come to a country, the culture of which would release them from the extreme indigence in which they were. They there-

therefore transported themselves into this island, and divided the whole ground among them ; but finding that they could not improve it all, they sent for other families from the continent. They granted them for ever a part of the ground, on condition, however, that they should every year pay them in different commodities, a rent proportioned to their crop.

The island of Tsong-ming was not then so large as it is now. In process of time several small islands being united to it, form'd one continued track about twenty leagues long, and five or six broad.

There is but one town in the whole country, which is of the third order, when compared with the other towns of the empire. The country is divided by an infinite number of canals, which receive the rain-water, and convey it to the sea. The land is even, and free from mountains. The canals are fenced by very high banks, to secure the fields against inundations.

The air of the country is temperate and wholesome, tho' the rains, which fall plentifully, especially in the spring and middle of the summer, render it very moist. The excessive cold does not last there above twelve days, but the intense heat continues two months, and would be intolerable, if it was not moderated by rains, accompanied with thunder and lightning. Twice or thrice a year there come terrible hurricanes from the north-east, which overthrow every thing. In other respects the country is very agreeable. The multitude of houses scatter'd up and down the fields presents us with a most charming spectacle. Here and there we see large villages full of the shops of merchants, who enjoy abundance of every thing.

Besides, between every village there are as many houses scatter'd up and down, as there are families employed at work. The high roads, which are narrow, because the inhabitants are sparing of their ground, are full of small shops on each side, to supply travellers with necessaries. Strangers are ready to imagine, that almost all the best cultivated parts of the island make but one continued city of an immense extent.

But what appears astonishing is, how the numberless multitude of the inhabitants of this island subsists. Geese, ducks and fowls, are the most common food. In winter the sea-coasts are all cover'd with wild ducks, which they take in gins. They have a large quantity of oxen, which only serve for labour, and are so tractable, that a child can lead them where he pleases.

The soil produces few fruits, and of these the best is the setse, which is as large as our apples. We there find water melons, which are red, and full of a fresh and sweet water. The soil produces no vines, but the whole island has plenty of wine. The inhabitants have found the secret of making very good wine of a kind of rice different from that which they use for food. They make this wine in the following manner: They leave the rice to soak in water, with some other ingredients, for twenty, and sometimes for thirty days; after which they boil the whole. When it is fermented, it is covered with a volatile froth, very like that of our new wines. Under this froth is a very pure wine, which when rack'd, is poured into well varnished earthen vessels. Of the lye they make a brandy almost as strong as that of France.

Tho' the situation of the island would make strangers think that almost all its inhabitants were  
fishermen,

fishermen, yet there are very few of them such by profession. They have all kinds of fish, and an incredible number of small vessels come loaded with them at several seasons of the year.

One of the fish which the Chinese most esteem, and which weighs about forty pounds, is by them called *Encunvasse*. They call it so, because it has on its back, belly, and two sides, a range of cutting scales, placed in a right line, and laid over each other, almost like the tiles of a house. It is an excellent fish, of a whitish colour, and in taste resembles veal.

When the weather is serene, they catch another very delicious fish, which they call the meal-fish, on account of its extreme whiteness. Its black eye-balls seem to be set in two small and shining circles of silver.

This fishing is hardly over till large vessels come from the province of Tche-kiang, loaded with another kind of fresh fish, which they call the yellow fish on account of its colour; it resembles the cod of Newfoundland.

However great the fish-trade of the island is, it would not be sufficient for the support of the inhabitants, unless a prodigious quantity of salt-fish were brought from the sea-coasts, between the mouth of the Kiang, and the province of Chan-tong.

The soil is not the same in all the island. There are three kinds of it very different from each other. The first lies towards the north, and is quite uncultivated. The shrubs, which grow there spontaneously, are of considerable value: some of them are used in building the country-houses, and the rest serves as firing, not only to all the country, but

but also to some of the coasts adjacent to the continent.

The second kind of soil is that which from the former extends to the sea on the south. The islanders in this have every year two crops ; the one of grain, which in general is in the month of May ; the other is of rice or cotton, the former in September, and the latter a little after. Their grains are wheat, barley, and a kind of bearded corn, which, tho' like rye, is nevertheless of a different nature.

The culture of the rice is the most troublesome. From the beginning of June they cover their fields with the water of the canals, which are very numerous. For this purpose they use certain machines like those employed in Europe for draining marshy grounds, or emptying ponds. They till the land three different times successively, with their feet constantly under water. Then they break the clods of earth with a mattock ; and by a wooden machine, on which a man stands upright, and which is drawn by an ox, they level the ground so as to make the water at an equal height in all parts of it. Then they pull up the rice, which a month before they had sown very thick in another canton, and transplant it more regularly into the ground thus prepared. When the rice begins to appear, they are very careful to pull up the weeds, which might choak it. In great droughts they endeavour that their fields should be covered with the waters of the sea, which fills their canals. What is surprising is, that these waters which are salt all the rest of the year, become sweet and proper to fertilise the land at the very time when the inhabitants intend to till it.

Their



Their method of clearing the rice of its husks, is very singular. It grows with a hard and rough skin, like that of barley. When it is in this state, they boil it gently in water, dry it in the sun, and unhusk it at several times. The first time they take off the coarse skin, and the second the red pellicle, which differs in colour according to the kind of rice, of which there are more than thirty sorts. Their rice is not farinacious and broken, like that of Europe, but very beautiful and whole.

The crop of cotton requires less trouble and fatigue than that of rice. The very day they cut down their corn, they sow the cotton in the same field, and turn the surface of the earth over it with a rake. When this earth is moistened by the rain or dew, there gradually rises a shrub about two feet high. The flowers which appear about the beginning or middle of August, are generally yellow, and sometimes red. The flower is succeeded by a bud, which is of the form of a gooseberry, and as large as a nut. When this bud is forty days old, it opens of itself; and being split in three different parts, contains three small parcels of cotton extremely white, and of the same form with the cods of silk-worms. These parcels are fix'd to the bottom of the open husk, and contain the seed for the following year. It is then time to reap the harvest, but when the weather is good, they leave the fruit exposed to the sun for two or three days, because the heat inflates it, and renders it more valuable.

As all the fibres of the cotton are strongly adherent to the seeds which they include, the natives use a wheel to separate them. This wheel has two very smooth rollers, the one of wood and the other of iron, about a foot long and an inch thick. They are so applied to each other, that there appears

no distance between them. While one hand moves the first of these rollers, and the foot the second, the other hand applies the cotton to them, which is separated by this motion, and passes from one side, while the seed remains bare on the other. They then card and spin the cotton, in order to make stuffs of it.

There is a third kind of soil, which, tho' apparently barren, is yet more profitable than the rest. It is a kind of pinguous earth measured out in several cantons of the northern part of the island. They obtain such a quantity of salt from it, as not only supplies the whole island, but also the inhabitants of the continent, who come for it secretly in the night time. They purchase it at a small price, on account of the risques they run; for if they are caught by the mandarins, their boats and salts are confiscated, and themselves condemned to work in the galleys four or five years.

It is not easy to explain how certain portions of earth dispersed thro' a whole country, should be so full of salt as not to produce a single herb, while other portions just contiguous to them, produce abundance of corn and cotton. It often happens that these last portions are filled with salt, while the former become proper to be sown with cotton or corn. This is one of the secrets of nature, which the human mind in vain attempts to penetrate.

They obtain the salt from this earth in the following manner. They first make the earth smooth as a glass, and then raise it in sloping ridges, in order to hinder the water from remaining on it. When the sun has dried the surface of it, and when it appears all white with the particles of salt, they raise it in small heaps, which they beat close on all sides, to hinder the rain from entering into them.

Then

Then they spread this earth upon large planks with a gentle declivity, and which have lips three or four inches high. Then they pour a certain quantity of fresh water upon it, which penetrating thro' the whole carries along with it all the particles of the salt into a large earthen vessel, into which it falls drop by drop, thro' a small canal made on purpose.

The earth thus purg'd does not, on that account, become useless. They put it by, and when it is dry they reduce it to powder, which they spread on the ground whence they took it. In seven or eight days it is mixed with an infinite number of particles of salt, which they collect in the same manner.

While the men are thus at work in the fields, the women and children are employed in cottages built on the spot, in boiling the salt waters. They put them into very large and deep iron basons, which are placed upon an earthen furnace so prepared, that the flame may be equally distributed to all the basons, and exhaled in smoke thro' a long vent built like a chimney at the extremity of the furnace. When these waters have boiled some time, they are inspissated, and gradually changed into a very white salt, which they stir constantly with an iron spatula, till it is entirely dry.

## C H A P. VIII.

*Of the arts and the medicine of the Indians.*

**N**O nation equals the Indians in what relates to the mechanic arts. Their tradesmen have a surprising skill and dexterity, and are particularly excellent at making stuffs so fine, that very broad and long pieces of them can be drawn thro' an ordinary gold ring.

If we tear a piece of muslin and give it to be mended by the Indian fine-drawers, it is impossible to discover where it has been join'd. They so dexterously unite the pieces of an earthen or porcelain vessel, that we cannot perceive where they have been broken.

The goldsmiths work in filigrin with incredible neatness, and perfectly imitate the European works, tho' their forge and other utensils for that purpose, cost them no more than a crown.

The loom which the weavers use costs no more, and with this loom we may see them at work in their courts, or on the road sides, weaving those beautiful stuffs so much sought after by all the world.

They have no need of wine to make brandy; for they make it of syrup, sugar, some barks, and some roots. This brandy is as strong, and burns better than that of Europe.

They paint flowers, and gild very well upon glass. We cannot help admiring some of their vessels proper for cooling water, and which are no thicker than two leaves of paper pasted together.

The Indian boat-men row in a different manner from the Europeans. They tug at the oar with their feet, while their hands serve them as a rudder.

The liquor which their dyers use loses nothing of its colour in the lie.

The European labourers prick their oxen with goads, in order to make them mend their pace, whereas the Indians only twist their tails. These animals are so tractable that they are taught to lie down and rise up, in order to receive or deposit burdens.

In the Indies they use a hand-mill which costs no more than sixpence, for breaking the sugar-canes.

A miller forms his stone himself with lack and emril. A mason paves the place where the meal is received, with a kind of cement which he makes of brick-dust and lime; and this pavement seems to be one single stone much harder than freestone.

They make fire-vents sometimes forty feet long, eight broad, and four or five inches thick, which they fix to the wall only on one side, without any other support.

It is with a line of several knots that their pilots make their soundings. They put one end of this between their teeth, and by means of a piece of wood fixed to the cord they easily observe the tail of the lesser bear, which is commonly called the north or polar star.

The lime is generally made with sea-shells. That prepared with snail-shells is used in whitening the houses; and that prepared of stone is chew'd with beet leaves. Some of the Indians use a quantity as large as an egg of this every day.

The butter is made in the first vessel that comes to hand. They split a piece of wood into four, and extend it in proportion to the vessel where the milk

is, after which they turn it in different directions by means of a cord fix'd to it: and in a short time the butter is made.

The people who sell the butter have the art of making it pass for fresh, when it is old and smells rancid. For this purpose they melt it, throw sour and coagulated milk into it, and eight hours after take it out in lumps, which they pass thro' a linen cloth.

The chymists employ the first pot they find, to revivify cinnabar and other preparations of mercury, which they do in a very simple manner. They easily reduce all metals into powder, and greatly esteem talc and yellow copper, which, as they say, consume the most viscid humours, and remove the greatest obstructions.

The physicians are more reserved than those of Europe in the use of sulphur, which they correct with butter. They also make a broth with long pepper, and boil the Indian pine apples in milk. They with success employ against all fevers, henbane corrected in cows urine, and orpiment corrected in lemon juice.

A physician is not admitted to prescribe to a patient, till he finds out his disorder, and the humour which predominates in him, which he easily knows by feeling the pulse.

The principal diseases which reign in the Indies are first, the cholera morbus. The method employed for the cure of this disorder consists in keeping all drink from the patient, and burning the soles of his feet. 2dly, The lethargy, which they cure by putting pepper beat with vinegar into the eyes. 3dly, An obstruction of the spleen, which has no other specific but the practice of the Indian devotees. They make a small incision over the spleen, and then insert a long needle between the flesh and

skin. From this incision, by sucking thro' a horn pipe, they obtain a certain pinguous matter which resembles pus.

Most of their physicians have a custom of throwing a drop of oil into the patient's urine. If it spreads, they say that this is a mark that he is too hot internally, if on the contrary it remains whole, it is a sign that he is defective in heat.

The common people have very simple remedies. For the megrim, they use the powder of the dried bark of the pomegranet pounded with four grains of pepper in the form of tobacco. For the common head-ach, they smell to a mixture of aromatic salt, quick lime and water. These vertigos, which proceed from a cold and gross blood, are cured by drinking wine in which some grains of incense have been steeped. For a deafness which proceeds from a redundancy of cold humours, they drop lemon juice into the ear. When the brain is loaded and obstructed with phlegm, they smell to the powder of black cumin. For the tooth-ach, a paste made of the crumbs of bread, and of the seeds of stramonium applied to the aggrieved tooth, numbs it so as to remove the pain. They order a person labouring under an hæmorrhage to smell to feverfew or bruised worm-wood. For the heart-burn and spitting of blood, they cover a giramont (an Indian fruit of the form of a gourd and taste of a citron) with a paste which they bake in the oven, and drink the water which comes from it. For the flatulent and pituitous colic they give four spoonfuls of water, boiled to two with anise and ginger. They also bruise a raw onion with ginger, and apply it to the part where they feel the pain. For the lientery they roast a head of garlick under the ashes, and when going to bed put it into their mouths to suck out the juice of it. They use the juice of cucumber leaves

leaves bruised for purging and vomiting. A difficulty of making water is cured by a spoonful of oil of olives well mixed with an equal quantity of water. For fluxes they roast some white cumin, and a little bruised ginger, which they swallow with sugar. They cure the fevers which begin with shiverings, by making the patient take three large pills of ginger, cumin, and black pepper, before the paroxysm. For tertian fevers they make him take for three days three spoonfuls of teucrium, or the greater germainder, with a little salt and ginger.

## C H A P. IX.

*The majesty and energy of the language of the Guaranis ; the character of that nation ; a description of the animals found in their country, and especially of a singular insect.*

**T**O form a judgment of the majesty and energy of the language of the Guaranis, a people of South-America, it is sufficient to tell the reader, that every word of it is an exact definition, which explains the nature of the thing to be expressed, and conveys a clear and distinct idea of it. In point of nobility and harmony it yields to none of those spoken in Europe ; besides it has many charms and delicacies ; but they require a great many years application to become perfectly acquainted with them.

The nation of the Indian Guaranis is divided into thirty cantons, in which there are more than a hundred and fifty thousand inhabitants.



This country is infested with wild beasts, and especially tygers. Here we find various sorts of serpents, and an infinite number of insects not known in Europe. Among these insects, there is a particular one which the Spaniards call pique and the Indians tung. It is no longer than a small flea, and insinuates itself between the skin and the flesh, especially under the nails, and in parts where there is any callus. There it forms a nest and leaves its eggs. If this nest is not quickly dislodged, it spreads itself on all sides, and produces the most terrible effects in the part where it is lodg'd; so that a person finds himself all of a sudden deprived of the use of his hands or feet, according to the part where the insect is situated. The remedy is gradually to reach its seat with the point of a pin, and extract it entirely, otherwise there is danger of the wound's becoming putrid.

Birds are here very numerous, and widely different from those of Europe. There are in this country more than twenty kinds of sparrows, the largest of which is no bigger than the smallest of ours. Their note is nearly like that of the linnet. They are green and blue, and so easily tamed, that in eight days after they are taken, they come and perch on the finger of any one who calls them.

'Tis principally in the marshes that we see birds of all kinds, which surprize by the variety of their colours, and the diversity of their beaks, which are of a singular form. Birds of prey likewise abound here, and some of them are of an enormous size.

## C H A P. X.

*Of the pintade, whether it is different from the meleagride ; of the tame and wild pintades.*

THE pintade is that bird which the Romans called *Afra avis*, and which in Europe we indifferently call an African, Barbarian, Guinea, Numidian, Tunis, or Mauritanian hen, but most generally a pintade.

Among a considerable number of authors who have spoken of the pintade and meleagride ; some, as Varro, Columella, and Pliny, have confounded and made only one species of them. Others, as Suetonius and Scaliger, have made two different species of them ; with this difference, that Scaliger pretends to have Varro on his side of the question.

We shall first give the passage of Varro on which this question is founded. This author, in the 3d chapter of his book on agriculture, distinguishes three sorts of different fowls, by as many distinguishing names. He calls the first *Villatica*, the second *Rustica*, and the third *Africana*. In speaking of this last species he expresses himself thus :  
 “ *Gallinæ aliæ sunt grandes, variæ, gibberæ, quas*  
 “ *meleagrides appellant Græci. Hæ novissimæ,*  
 “ *in triclinium ganeorum introierunt e culinâ,*  
 “ *propter fastidium hominum videntur propter*  
 “ *penuriam magno.*”

The single reading of this passage, shows that Varro could neither more clearly nor precisely explain himself to evince, that the pintade and meleagride are of the same species. Scaliger has however

imagined that he found in it two distinct species, by supposing that there ought to be a full point after gibberæ, and that then we ought to read, “Quas meleagrides appellant Græci, hæ novissimæ, &c.” But besides, that this punctuation is only the invention of Scaliger, and no mark of it to be found in the different copies, it would make Varro fall into a palpable contradiction, because in this case, after having laid it down as a principle that there are three species of hens, he would add a fourth to them, which is absurd.

Let us now explain this passage of Varro. First then, Gallinæ sunt, says he, the pintade ought to be class'd under the genus of hens. It has all the attributes, and all the qualities of them, a crest, a beak, plumage, a roost, a set of eggs, and a great care of her young. In the second place, the differences of the pintade hens are very well described by Varro, in these words, “Grandes, variæ, gibberæ. Grandes, they are really larger than common fowl. Variæ, their plumage is all mottled; they are of two colours, some have black and white spots disposed in a rhomboidal form, and others are of a cineritious grey colour. Both kinds have their bellies, and the extremities of their wings, white. Gibberæ, their back rises in a bunch, and pretty naturally represents the back of a small tortoise. This bunch, however, is only formed by the position of their wings; for when the feathers are pulled off them, there is no longer any appearance of a bunch on their bodies. What makes the bunch appear more conspicuous, is that their tails are short and sunk downwards, and not elevated like those of common fowls.

This description which Varro gives of the pintade is just, but it is not complete. The pintade's neck is pretty short, slender, and slightly covered

covered with down. Its head is very singular; for it is not covered with feathers, but with a spongy, rough, and wrinkled skin, of a blueish white colour, with a small crest, like a crown on the top. This crest is half an inch high, and of a cartilaginous substance. From the inferior part of the head, which may properly be call'd the cheeks of the pintade, hangs on each side a red and fleshy beard, of the same nature and colour with the crest of cocks. In a word, its head is terminated by a beak, three times larger than that of common hens, very sharp, hard, and of a beautiful red colour.

The pintade roosts and sits like common fowls. Its eggs are smaller, and less white. They are somewhat of a flesh colour, and mark'd with black specks. The pintades are with difficulty brought to lay in the hen-house. They search for the thickest hedges or copse, where they lay a hundred or a hundred and fifty eggs successively, provided some are only left in the nest. People do not generally permit the tame pintades to hatch their own eggs, because the mothers do not sit close enough, and often forsake their chickens. The eggs are oftener hatch'd by Indian or common hens. Nothing is more beautiful than the young pintades; they resemble small partridges, and their red feet and beak, joined to their plumage, which is grey like that of a partridge, render them very agreeable.

The pintade is an extremely lively, restless, and turbulent fowl. It runs with extraordinary swiftness, almost like the quail or partridge, but cannot fly very high. It delights however to perch on trees, or the tops of houses, where it remains all night, rather than in the hen-house. Its cry is harsh, disagreeable, shrill, and almost continual.

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Besides, it is quarrellsome, and wants to be mistress of the walk. The largest, and even the Indian hens, are obliged to yield to her. The hardness of her beak, and the agility of her motions, make her respected. Her method of fighting nearly resembles that which Sallust ascribes to the Numidian cavalry. Their charges, says he, are rash and precipitate; if they are resisted, they turn their backs, and immediately turn about abruptly. The pintades resembling the place of their origin, have preserv'd the Numidian genius. The Indian cocks, which are very large, flattering themselves that they can easily beat the pintades, advance against them with pride and gravity; but the pintades defeat them by their marches and counter-marches; they hardly make ten turns, and give twenty blows, till they force their antagonists to retire.

The pintades are not natives of America, but come from Guinea. The Genoese brought them with the first negroes, which they were engaged to carry to the Castilians in 1508. The Spaniards have never thought of keeping them at home. They have left them to roam at pleasure, in the woods and thickets, where they have become wild, and multiplied incredibly. We cannot walk in the Spanish territories, without finding prodigious flocks of them. These are call'd wild pintades.

The wild pintades are reckon'd the most delicate food that can be set upon a table. Their flesh is tender, and of a taste surpassing that of pheasants. The taste of the tame pintades is not so fine, tho' it is better than that of other poultry.

After these disquisitions, we shall enquire, whether the pintade ought to be distinguished from the meleagrid. Suetonius is of this opinion, but his authority is of no importance, when compared with that of Varro, Columella, and Pliny. These  
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were professed naturalists, whereas Suetonius considered chiefly the history and politics of courts.

The meleagride, say some, delights in marshes ; and is not the wild pintade found also in aqueous and marshy places ? If the meleagride takes little care of her young, which she often abandons, is it not the same case with the pintade ? But the pintade, say some, is larger and fatter than the meleagride. Some pintades are dry and lean, and some are larger than others. Is not this same diversity found in ordinary fowls ? Should we on this account establish different species among them ? It is said by some, that the fleshy and cartilaginous appendices, which hang from the cheeks of the pintades, are red ; whereas the meleagrides have them blue. But let us consider the head of the pintade, and a part of its neck, which are blue, and we shall see, that this pretended difference is only an error, and that, for want of attention, people have sometimes confounded the bearded appendices with the skin, and sometimes the skin with the appendices.

Besides, when the pintades are young, these beards do not hang down sufficiently to be well observ'd. We only at first see the blue skin at the inferior part of the head. When the pintades are old, the fleshy beards assume a deep red colour, whereas the skin of the neck being more shrivell'd in the young, strikes the eye more. 'Tis this change which has given rise to the mistake of the authors, who have wrote of the Numidian hen, and laid a foundation for the pretended difference between the appendices of the pintade and meleagride, of which two species have very improperly been made.

We shall now examine a passage of Pliny, which seems not to agree with that quoted from Varro.

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This last, when speaking of pintades, says; “ Hæ novissimæ, in triclinium ganeorum introi-  
 “ erunt e culina, propter fastidium hominum ve-  
 “ neunt propter penuriam magno.” It follows from these words, that the pintade meleagrides were sometime before introduced into Rome; and that people who kept good tables, found nothing more proper to excite their appetites, which rendered them extremely dear. This is confirm’d in several places of the works of Horace, Juvenal, Petronius, and Martial.

Pliny says on the contrary, that they were very much sought after at Rome, “ propter ingratum  
 “ virus.” We ought to conclude from these words, either that Pliny did not understand the propter fastidium hominum of Varro; or that these words, “ propter ingratum virus” have been foisted in, and the text corrupted.

Varro and Pliny grant, that the pintade and meleagride are the same fowl; both agree, that they were very much sought after by the Romans, that they were very dear in Italy, and accounted a delicacy at the best tables. But Varro pretends, that they were only sought after by people who keep good tables, “ propter fastidium hominum,” that is, to relish their appetite, and procure a stomach; and Pliny thinks, that they were rare, “ propter ingratum virus.” What relation is there here, or where is the consequence drawn? Can food be dear, and much sought after, for no other reason than that it is abominable and nauseous?

## C H A P. XI.

*Rules observ'd by the Indians, in the administration of justice, qualities which the judge ought to have, what the duty of the pleaders is, maxims which serve as laws to the judges.*

THE Indians have neither code nor record, nor any book in which those laws are written, which they ought to observe in determining those differences which happen in families. They have indeed the Vedam, which they look upon as a sacred book ; but it is not from it that they draw the maxims they use in regulating their judicial procedures. They have another book which they call Vichna-churam, which contains a great many fine sentences, and some rules for the different tribes of the people. In this book is related the ingenious manner in which some of the ancients discovered truth, when people endeavoured to conceal her by various artifices. Tho' the Indians admire the wit and sagacity of these judges, they are not very solicitous to imitate their example, and obey their commands. In a word, we there find a great many admirable sentences of the ancient poets, who taught a sound morality ; but it is not from this work that they draw the principles of their decisions.

All the equity of their judgments is supported on certain inviolable customs and usages which parents transmit to their children. They look upon these usages as certain and infallible rules for maintaining the peace of families, and determining the differences not only of private persons, but also of princes. When a person can prove that his claim



claim is founded on the custom followed in the tribes, it is enough for him ; there is no more reasoning on the point ; and he gains his cause. Tho' you should demonstrate that this custom is ill established, and subject to great inconveniencies, you would gain nothing, the custom gets the better of the strongest reasons. How, say they, can people act against usages established by the general consent of our ancestors, by those who have followed them, and by those now alive ? Would it not be madness to contradict what has been regulated by so many wise men, and authorised by continual experience.

They have not wrote these customs, because, say they, if they were written in books, none but the learned could read them, whereas being transmitted from age to age by tradition, all the people are perfectly acquainted with them. This, say they, is the state of the general laws and universal customs ; but as for the particular customs, they were engraved on plates of copper, which were carefully preserved in a great court at Cangibouram. The Moors having almost totally destroyed that city, it was not possible to discover what was become of these plates. They only know that they contain'd what related to every one of the tribes in particular, and the order which they ought to observe among each other.

As for other affairs not relating to the tribes, they are easily determined. Good sense, and the light of nature, are sufficient to guide a man who desires to give judgment according to equity. Besides, there are certain general maxims, which stand instead of laws, and which are known by every body. The principal rules relating to the tribes, are universally known.

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The Indians sacredly preserve the remembrance of some of their kings, who have rendered themselves famous by the equity of their judgments. The most celebrated of these kings was Mariadira-men. The following is a sentence which he passed, and has some analogy to that formerly passed by Solomon.

A rich man had married two wives ; the first, tho' ugly, had a great advantage above the second ; for she had had a child by her husband, and the other had none. The second, in recompence for her sterility, was such a beauty, that she became absolute mistress of the husband's heart. The first wife, provok'd at seeing herself despised, while her rival was caressed and ador'd, took a resolution to be reveng'd on her, and had recourse to a stratagem as cruel as it is uncommon among the Indians. Before she executed her design, she told the neighbourhood, that she was sensible of her husband's contempt for her, but that she had a son by him, who should for the future prove her only comfort. She accordingly shewed all the external marks of tenderness and affection to the infant, who was then at the breast.

After having thus convinc'd the world of the excessive love she bore her son, she resolv'd to kill him, and accordingly twisted his neck about, one night when her husband was in a distant town, and laid the murdered infant by the second wife, who was fast asleep. In the morning, pretending to seek for her son, she ran into the chamber of her rival, and there finding the child dead, she fell upon the ground, tore her hair, and made the most terrible howling and lamentation. The neighbourhood assembled, and were universally prejudiced against the other woman ; for, said they, it is not possible, that a mother should kill her

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own son; and tho' a mother should be so unnatural as to do so, yet this woman cannot be suspected, since she ador'd her son, and look'd upon him as her only comfort. The second wife said in her defence, that no passion is more cruel, violent, and capable of producing more tragical effects than jealousy. This affair was brought before Mariadiramen. A day was appointed for each woman to plead her cause. They did so, with that natural eloquence which passion generally inspires. Mariadiramen having heard both parties, pass'd the following sentence. Let the woman who is innocent, and who pretends that her rival is culpable, take a turn thro' the assembly in the posture which he should shew her. This posture was such as did not become a modest woman. Upon this the mother of the child said, In order to convince you that my rival is culpable, I not only consent to take one turn before this assembly, in the manner you have ordered, but also a hundred, if requir'd. As for me, said the second, tho' innocent, yet I ought to be condemn'd to the most cruel death, if I did what is now requir'd of me. The first wife wanted to make a reply, but the judge ordering silence, declared that she was guilty, and her antagonist innocent; for, added he, a woman, who at the prospect of certain death will not do an indecent action, could never have committed so great a crime; on the contrary, a woman, who having lost all sense of modesty, without trouble commits the most indecent actions, sufficiently declares, that she is capable of perpetrating the blackest crimes. The first wife, confounded to see herself thus discover'd, was forc'd publickly to acknowledge her crime.

The Indians relate another still more surprising example of the sagacity of the same judge.

A man, whose name was Parjen, remarkable for his strength and extraordinary agility, lived very peaceably with his wife for some time after they were married. But one day, falling into a passion at her, he left her, and went into a remote kingdom. During his absence, one of the subaltern gods assumed the figure of Prajen, came into his house, and made up his peace with the father and mother-in-law. They had cohabited together three or four months, when the true Prajen came home. He threw himself at the feet of his father and mother-in-law, in order to regain his wife, confessing seriously, that he was in the wrong to fly into a passion on so slight an occasion; and begg'd that his first fault might be forgiven. The father and mother-in-law were greatly surpris'd at this discourse; for they could not comprehend how Prajen should sue a second time for the pardon which had been granted him some time before. Their surprise was much greater when the counterfeit Prajen came home. When the two Prajens met, they began to quarrel, and wanted to banish each other from the house. The whole neighbourhood assembled, and none could determine which was the true Prajen. At last the affair turned out just like the two Sosias of Plautus. The dispute being heard before by the king, was ordered to be laid before Mariadiramén. This judge was greatly perplex'd, when, after hearing the true Prajen declare his name, that of his father, of his mother, and other relations in the town where he was born, together with some remarkable events of his life, the counterfeit Prajen said, The man who has spoken is a counterfeit; he has been inform'd of my name, of my relations, of my birth, and of

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every thing that relates to me, and for that reason comes here to declare himself the true Prajen. I am the genuine man, and for the truth of my assertion, I appeal to all those here present, who have been witnesses to my strength and agility. Upon this Mariadiramén seeing a large stone, which several men could hardly move, spoke in the following manner: What each of you says, puts it out of my power to give a decision, but I have at the same time an infallible method of discovering the truth. The true Prajen has the reputation of having great strength and agility; let him give a proof of them by lifting this stone. The true Prajen did his endeavours, and the spectators were surprised to see him lift it from the ground. The counterfeit Prajen tried it in his turn, and lifted it as if it had been a feather. Upon this the assembly cry'd aloud, This is the true Prajen. But Mariadiramén pronounced sentence in favour of the former, who had only raised the stone from the ground, and gave this reason for his procedure. He who first lifted the stone, has done what a man of extraordinary strength can do; but he who took it up easily, and seemed to be able to toss it up into the air, is certainly a demon, or one of the subaltern gods, who has assumed the figure of Prajen; for no mortal is capable of doing what he has done. Upon this the false Prajen was so confounded, that he disappeared in an instant.

These examples sufficiently shew the ideas which the Indians have of a judge. They triumph when they express the qualities which he ought to have. A judge, say they, ought to be entirely acquainted with the case disputed. He ought perfectly to know all the maxims which are subservient to law. He ought to be a man of substance, that he may be proof against bribery and corruption. He ought

to be more than twenty years of age, that indiscretion, which is peculiar to youth, may not render him rash in his decisions. He ought to be under sixty years of age, because at that period of life people begin to lose some degrees of their penetration. If he is a relation or intimate acquaintance of one of the contending parties, he is not to appear in quality of judge. He is never to judge alone, however upright or knowing he may be. His principal care ought to be to examine the witnesses, who are easily corrupted, and very dexterous in giving equivocal answers, an art in which the Indians excel ; so that the judges order their answers to interrogations to be written ; then they dismiss the parties, and order them to return two days after, when they propose the same questions to them in a somewhat different manner ; and because the judges are generally as artful as the witnesses, they turn their answers into all the senses they can bear, that they may not allow them the liberty of explaining what they have said, otherwise than in a natural sense.

Patience, sweetness of temper, and especially a great attention to what is prescrib'd by custom, are also qualities strictly recommended to their judges.

They have a kind of proverb which they often repeat ; which is, that the judge ought never to look either at the countenances or hands of the persons who plead their causes.

With respect to witnesses whom a judge is often obliged to interrogate, they think that he ought to be dissident of such as are young, past sixty years of age, or poor. As for women, they are never to be admitted, except in cases of absolute necessity. They have a comical notion of the testimony given by people who have but one eye, and those who are hump-back'd, or labour under

any other deformity. Experience, say they, teaches us, that the testimony of such people is always very suspicious, and that they are much more easily corrupted than others.

Every chief man of a town is the natural judge of the suits carried on in the town. And that his judgment may be passed with the greater equity, he chooses three or four of the most experienced inhabitants who are like assistants to him, and in conjunction with whom he pronounces his sentences. If the person condemned is not content with his sentence, he may appeal from it to the maniacarren, a kind of intendant, who has several towns under his government. In a word, he may appeal from this sentence to the immediate officers of the prince, from whose sentence there is no appeal. If the matter relates to the tribes, the head men of the tribes determine it. Relations may also be assembled on these occasions, and they generally judge very equitably. The gourous, or spiritual fathers of the Indians, decide a great part of the disputes which arise among their disciples. Sometimes people at law refer their difference to arbitrators, and in this case they acquiesce in the sentence pronounced, without having recourse to other judges.

Among all these judges none take money except the maniacarens, who are not always guilty of this practice. If the sum is an hundred crowns, there are ten given to the maniacarren; and the person who gains the suit, is generally obliged to pay this sum, he who loses being sufficiently punished, by paying what he owed.

From the judges let us pass to the parties. Those who have any plea must plead their own cause, unless some friend does them that piece of service. They must keep themselves in a posture  
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that testifies respect in the presence of their judges. They do not interrupt each other, but are content with using a particular motion of the head, to testify that they can confute what the other advances. When the pleaders have done, the parties and the witnesses are remov'd, after which, the judge and the counsellors confer together ; and when they have agreed on what is to be pronounced, the judge recalls the parties, and pronounces the sentence.

As most processess in the Indies relate to debts and borrowed sums, it is proper the reader should know the manner in which these debts are contracted. 'Tis then the custom for him who borrows to give a mourri, that is a bond, to pay the creditor the principal, with interest.

The interest is of three sorts, one of which is virtuous, another sinful, and the other neither virtuous nor sinful. The virtuous interest is one per cent. every month ; for they say a person who takes no more exercises a great act of virtue. The sinful interest is four per cent. every month. And the interest which is neither sinful nor virtuous, is two per cent. every month, that is twenty four every year.

When a creditor has waited several months, or a year or two, he has a right to arrest his debtor in the name of the prince, and then the debtor is obliged to stay at home, under pain of being declared a rebel. He is not, however, obliged to appear immediately before the judge ; but the first persons who go past. intercede for him, and oblige the creditor to give him some months respite. When this time is expir'd, the creditor may again arrest the debtor in the name of the prince. It is surprising to see the exact obedience of those who are arrested ; for they not only dare not make their escape, but also can neither eat nor drink till the



<sup>c</sup>reditor gives them liberty. Then they are brought before the judge, who also gives them some months respite, during which time the interest runs on. At last, if the debtor fails to pay at the time appointed, the judge condemns him to a kind of prison, and orders his cattle and moveables to be sold. The creditor generally abates something of the interest due.

When a man is accused of a robbery, and there are strong prejudices against him, they oblige him to prove his innocence, by putting his hand into a cauldron of boiling oil. When he pulls out his hand, they wrap it up in a piece of stuff, which they seal on his wrist. Three days after they view his hand, and if no mark of the scald appears, he is declared innocent. This species of trial is very common among the Indians, several of whom can take their hands out of boiling oil, as sound as when they went in. When the Indians require this trial, they order the criminal's hands to be wash'd, and his nails pair'd, lest there should be some remedy conceal'd, in order to prevent the scalding.

They have also recourse to another trial, which is very common among them. They take a large round vessel, whose mouth is no wider than is sufficient to admit one's fist. They put into this vessel one of these large serpents whose bite is mortal, if not instantly remedied. They also put a ring into it, and oblige the persons suspected of the robbery to take it out, and the first who is bit is declared culpable.

But before it comes to this extremity, they use great precaution not to expose the accused too rashly to such trials. If, for instance, it is a necklace of gold, or any other ~~trinket~~ that is stolen, they give thirty or forty persons round vessels, almost like a bowl, that the robber may  
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secretly slip the thing stolen into his. These vessels are made of a substance which is easily dissolv'd in water. Every one carries his vessel to a kind of cistern, where all the vessels are diluted, and where the thing wanted is found, without any possibility of discovering the robber.

In trials for murder, if the law of retaliation takes place in any tribe, it is to be observ'd with the utmost rigour. Murders are very rare thro' all the Indies; and this perhaps is the reason why there is so little justice for such crimes. If a murderer gives a certain sum to the prince, a hundred pagods, for example, he obtains a pardon; and what is surprising is, that if one of the king's officers is kill'd, the murderer will be acquitted for an hundred crowns. A husband may, according to the law, kill his adulterous wife and her gallant; but he must kill both, and then there can be no action against him.

It is never lawful to kill a bramin; whatever crime he may commit, he can only be punished by having his eyes pull'd out. This is the method in which justice is administred among the Indians. The following are some of those maxims which serve as laws to direct their judges in the sentences they pass.

### FIRST MAXIM.

*When there are several children in a family, the male children are the only heirs, and the females have no pretensions of heritage.*

This maxim appears unjust, and contrary to the law of nature, since the girls have the same father and mother with the sons. But the Indians answer, that it is custom; and as it has been established by

the consent of the nation, it cannot be unjust. They add, that the daughters have no reason to complain, because the fathers and mothers, or if they are dead, the brothers are obliged to provide them with husbands ; that by thus transplanting them, as it were, into another family, as noble as their own (for they cannot marry out of their own tribe) the advantages a girl reaps in the family into which she goes, are equivalent to a dowry. 'Tis however true, that the fathers and mothers reap almost all the advantage arising from the marriage of their daughters. 'Tis to them that the husband carries the sum with which he purchases the lady destin'd for him ; for it is to be observ'd, that among the Indians, to be married, and to purchase a wife, is the same thing.

The Indians answer, that the sum given by the husband to the father-in-law, has been almost all laid out in trinkets for the bride, that the rest of it goes for the marriage-feast, and that it often costs the father more than he received from the husband.

There are, however, petty kingdoms in the Indies, where the princesses have great privileges, which place them above their brothers, because the right of succession is on the mother's side. If a king, for example, has a daughter by a wife of his own blood, tho' he have a son by another wife of the same tribe, the princess will succeed to the kingdom, and may marry whom she pleases. Tho' her husband is not of the blood-royal, yet her sons are always kings, because they are of the blood royal on the mother's side, the father being accounted nothing, and this right coming only by the mother.

From this principle we ought to conclude, that if this princess who reigns has a boy and a girl, and if there cannot be a princess of the blood royal found

found to be married to the prince, the children of the daughter will reign in preference to those of her brother.

## SECOND MAXIM.

*It is not always the eldest son of the kings, princes, paleacarrens, and chiefs of towns, who succeeds to the state and government of his father.*

The Indians distinguish two sorts of dignities ; those which descend from the father to the son, and those which are only attached to some persons, without necessarily devolving to their children. These last the prince may dispose of at pleasure. But we here speak of hereditary states. Custom has established that the eldest should succeed, when their good qualities render them capable of managing ; but when they are dull and improper to govern, and when the younger brother has talents for discharging the office of a prince, the king disposes of things so as make the states fall to the share of the younger son. If he should not do so, the relations would assemble after his death, and make choice of the younger. As this custom is established the eldest does not take it ill. His condition is not the worse on this account ; for without having the chagrin and toils attending royalty, he enjoys a state equally grand. They omit nothing which can alleviate the trouble produced by a forced submission. What is here said of kings and princes, is also to be understood of paleacarrens, and the chiefs of cities. The younger is always preferred to the elder, when he has more merit.

The conduct of the Mogul princes is very different. He who has the greatest forces and gains the

the victory over his brothers, succeeds to the vast states of the Mogul. The vanquish'd are always either imprisoned or killed, This is a strange policy of the Moguls, which induces brothers to a kind of necessity of murdering each other.

### THIRD MAXIM.

*When the effects have not been divided after the death of a father, all the riches which one of the children has acquired, are added to the common stock, and divided equally.*

This maxim appears strange, but it is generally followed by the Indians, and according to this rule they terminate a great many law-suits. An example will render the thing more obvious. Let us suppose an Indian who has five children, to leave at his death a hundred pagods, which amount to five hundred pounds of our money. If the division is made, each of the sons ought to have a hundred pounds; but if it is not made, as it rarely is, especially when any of the brothers are unmarried, then tho' the eldest has acquired ten thousand pagods, he is obliged to put them to the common stock to be equally divided among all the brothers. For this purpose the friends and relations are assembled, and if the eldest makes any resistance, he is sure to be worsted.

The Indians have another singular custom; for when some of the brothers are dull, and the rest men of parts, they make the portion of the former a great deal more than that of the latter; because, say they, he who is dull is incapable of improving what is left him, whereas he of quick apprehensions, will soon become much richer than his brother,

ther, to whom the greatest part of the heritage is left.

In some families there is never any division made; the stock is common, and they live in a perfectly good understanding. This happens when some one of the family is able to support the rest. He is at all the expence, and is, as it were, superior to the others, who have no other care but to work agreeably to his orders. He provides wives for the sons and grandsons of his brothers. He furnishes them with the necessaries of life, cloaths, and other things requisite; and what is surprizing is, that there are some women capable of governing several families in this manner. In some families they never make a division; and yet these are as rich as the generality of Indian families.

#### FOURTH MAXIM.

*Adopted children have an equal share with the natural children, in the effects of the fathers and mothers who have adopted them.*

When a man has no children, he often adopts one of some of his relations. The ceremonies used on this occasion are very remarkable. In a large house they assemble the relations of the person who adopts. There they prepare a large copper vessel of the same figure with our plates. They place it in such a manner that the child to be adopted can put both his feet into it, and stand upright if he is able. Then the husband and the wife speak nearly to the following purpose.

We acquaint you that having no children we are desirous to adopt him whom you see. We so make choice of him for our son, that henceforth our effects shall belong to him, as if he was really begot

got by us. He has no longer any thing to hope from his natural father. We are therefore going to drink the saffron water, if you consent to it. The bystanders give their approbation by a nod of the head. After this the husband and the wife, stooping, pour saffron water into the vessel, and after having washed the child's feet with it, they drink the remainder. Then they take a minute of what has passed, which is signed by the company.

If the husband and wife afterwards have children, they are the younger brothers of him who has been adopted, and he enjoys the privilege of the eldest, since the law makes no difference between adopted and other children.

There is another kind of adoption which has not the same advantages, but has something very singular in it. If parents have lost a child and see another who resembles him, they desire this other to look upon them as his father and mother, to which the child readily consents, and then the adoption is made. This adoption is in the language of the country called *oppari*. What is remarkable is, that an Indian of a low tribe may, by *oppari*, take a bramin for his son, if he has features like his child, and the bramin will call him father; but they must never eat together, because they are of different tribes.

What is said of the father and mother with respect to the son adopted by *oppari*, is also to be understood of brothers and sisters, who in like manner adopt him or her who resembles a dead brother or sister. They afterwards treat them as brothers and sisters, assist them in their wants, and share their happiness and misfortunes. The Indians say, that by this means they greatly alleviate their grief for their relations, since in those whom they adopt they find other children, brothers and sisters.

sisters. But this sort of relationship is terminated by the death of the persons who adopt, and does not pass to their children.

## FIFTH MAXIM.

*Orphans are to be treated like the children of those to whom they are entrusted.*

One of the wisest regulations among the Indians is, that relating to orphans. If they have uncles and aunts, these are by the law deemed their fathers and mothers, and obliged to bring them up as the other children of the family. The reputed father is obliged to marry them when they are of a proper age, and to lay out the expences necessary to put them in a way of living.

In consequence of this custom, when a man has lost his wife, he endeavours to marry her sister. This maxim appears admirable to them; for, say they, by this means there is no step-mother, and the children of the dead sister always become those of the living one. If this man did not marry his wife's sister, he must espouse another, who in all probability would abuse her husband's children for the advantage of her own. Whereas, if the sister of the deceased marries her brother-in-law, who is a widower, she will always look upon her sister's children as her own.

In a word, if orphans have neither elder brother, uncles nor aunts, they assemble the relations, who make choice of some one to take care of them. They write down what the orphan's father has left; and he is obliged to quit him as soon as he is of age. Those who bring up orphans, make them earn their bread as soon as they are able to work.

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If they are children of parts they put them to school to learn to read, write, and to manage accounts.

#### SIXTH MAXIM.

*Whatever crimes children may commit against their fathers, they can never be disinherited.*

The Indians imagine that this custom is very wise and equitable. Thus, when a son strikes and wounds his father, or even makes an attempt on his life, without succeeding, the father is obliged to pardon him; and if a father should declare on his death-bed, that any one of his sons should not have a share of his heritage, on account of his bad behaviour, the brothers who should pretend to execute the will of their father, would be cast in all the courts of the Indies.

When we tell the Indians, that it is contrary to common sense, to say that a father cannot detain his effects from an ungrateful son, who has despised and insulted him, they answer, that on the contrary, nothing is more scandalous than to see a father die with sentiments of hatred to his children. A father, say they, is obliged to pardon his son, however ungrateful and unnatural he may be; for, in a word, is not this son begotten by the father? he is therefore a portion of himself; and who ever saw a man cut his right hand, because it had cut his left?

For the same reason children cannot disinherit a father, however unreasonable he has been to them. Thus, if an only son dies very rich, and without children, his father is his successor, and nothing can deprive him of the heritage.

## SEVENTH MAXIM.

*The father is obliged to pay all the debts which the children have contracted, and the children those contracted by their fathers.*

This is a general rule, and serves to decide processes of this kind. According to this custom if a debauched son borrows money every where, and gives lawful notes for it, the father is obliged to pay his debts. He, in vain, says, that he does not deserve this favour, since the money he borrowed only served to augment his debauchery. They answer, that the goodness of a father does not permit him to use this rigour. The same rule is observed with respect to the debts which the fathers contract, since the children are obliged to pay them. Tho' they could prove, that the father has squandered away the money borrowed on foolish, or perhaps wicked purposes, and even tho' the son should renounce the inheritance, he is always sentenced to pay the debts of his father.

The same holds true of the debts which one of the brothers contracts before the division of the inheritance. The eldest is obliged to pay them, and the squanderer has his share of the common stock as the other children. The reason of this conduct is founded on this maxim, that after the death of the father, the eldest brother becomes, as it were, the father of his brothers. In a word, the others throw themselves at his feet, and he looks upon them as his children. Thus, as the father is obliged to pay the debts of his children, the eldest brother, who is in the place of a father, is obliged to pay their debts before the division of the inheritance.

ritance. But this division is always made very late. This rule does not extend to the sisters, since neither fathers nor brothers are obliged to pay their debts.

These are the general maxims which serve as laws among the Indians, and which are exactly followed in the distribution of justice.

## C H A P. XII.

*Description of California ; character, manners, and occupations of the inhabitants of that island ; the remarkable plants, fruits, and animals found there.*

**I**N California, as in other beautiful countries, there are spacious plains, agreeable vallies, and excellent pasturage for large and small cattle ; fine springs of fresh water, rivulets, and rivers whose banks are covered with willows, reeds, and wild vines.

During the summer the heats are very intense upon the coast, and it rarely rains. But in the main-land the air is more temperate, and the heat is never excessive. This holds nearly true with respect to the winter. In the rainy seasons there is a kind of deluge, and when it is over, instead of rain, the dew is so copious every morning, that one would think it had rained, which renders their grounds very fertile. In the months of April, May, and June, there falls with the dews a kind of manna, which is congealed and hardened under the leaves of the reeds. It is not quite so white as sugar, but is equally sweet.

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The rivers are full of fish, and especially of crabs, which they put into fish-ponds, to be taken out as occasion requires. There is also great plenty of a fruit which the Spaniards call *xicarnes*; and which has the finest taste of all the fruits in Mexico. Thus, we may say, that California is a very fertile country. During the winter, and at all seasons, we find on the mountains large pistacho trees of all kinds, and among the rest, that which the Chinese, who are the natives of the country, call *palosanto*. It bears a great deal of fruit, and an excellent incense is obtained from it.

If this country abounds in fruits, it is not less fertile in grains, of which the natives have fourteen kinds. They also use the roots of several trees and plants, and among others that of *yguea*, to make a kind of bread. Here are produced excellent cherries, a kind of red lentils, of which they eat a great deal, citrons, and water-melons of an extraordinary size.

The country is so fertile, that it is common for some plants to bear three times a year. Thus, with labour in cultivating the ground, and skill in distributing the waters, the country would be extremely fertile, since without these advantages, fruits and grains of all kinds are found in great plenty.

Besides several sorts of animals known among us, which are found here in great plenty, and are good food, as goats, hares, rabbits and others, there are two sorts of fallow beasts unknown in Europe. They call them sheep, because they have something of the figure of our sheep. The first species is as large as a calf one or two years old. Their head has a great resemblance to that of a stag, and their horns to those of a ram. Their tail and hair which are speckled, are shorter than those of a stag.

But their hoofs are large, round, and cloven, like those of an ox. Their flesh is very good and delicate. The other sort of sheep, some of which are black, and others white, are less different from ours. They are larger, and have a great deal of wool, which is easily spun, and proper for making cloth.

Besides these animals used for food; there are lions, wild cats, and many others like those found in New-Spain. They have brought into California cows, and a great number of small cattle, such as sheep and goats, which have multiplied incredibly. They have also imported a great many horses and mares, in order to stock the country with them.

As for birds, all those of Mexico; and almost all those of Spain, are found in California. There are pigeons, larks, turtles, and a great many partridges of an excellent taste, geese, ducks, and many other sea and fresh-water fowls.

The sea abounds in fish of an excellent taste. They there catch pilchers, anchovies, and tunies, which suffer themselves to be taken with the hand on the sea-shore. There are very often whales seen there; and all kinds of tortoises. The shores are full of shells much larger than those from which the mother of pearl is obtained. 'Tis not from the sea that they get their salt, since they have salt-mines, the salt of which is white and shining like crystal; but at the same time so hard, that they are often obliged to break it with a large hatchet.

It is near two centuries since California was known. Its coasts are famous for the fishing of pearls. This has rendered it the object of the desires of the Europeans, who have often formed schemes for establishing themselves there.

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Tho' heaven has been so bountiful to the Californians, and tho' their soil spontaneously produces, what does not grow elsewhere without a great deal of trouble and pains, yet they have no regard to the riches and abundance of their country. Content with the necessaries of life, they are little solicitous about every thing else. For fishing they use small boats, without any dread of danger, because they are excellent swimmers.

The country is very populous; especially in the northern parts; and tho' there are very few boroughs which do not consist of twenty, thirty, forty, or fifty families, yet they have no houses. The trees defend them from the heat of the sun by day; and of the branches and leaves they make a kind of bower; to screen themselves from the injuries of the nocturnal air. In winter, a considerable number of them shut themselves up in caves which they dig in the earth.

The men go quite naked, and only cover their heads with a sort of very fine stuff, or with a kind of net-work. For an ornament they carry about their necks, and sometimes in their hands, figures of mother of pearl very well cut, and very elegantly adorned with small round fruit almost like beads. For arms they have nothing but bows and arrows, or javelins, which they always carry in their hands, either for hunting or defending themselves against their enemies; for the boroughs frequently make war upon each other.

The women are cloathed a little more modestly, wearing from their middle to their knees, a kind of cloth made like the finest mats. They cover their shoulders with the skins of beasts, and like the men wear very fine nets about their heads. These nets are so fine that the Spanish officers tie up their hair with them. The women, as well as

the men, wear necklaces of mother of pearl, mixed with the kernels of fruits and shells, which hang down to their middle, and bracelets made of the same materials.

The most general employment of the men and women is spinning. The thread is made of long herbs, which with them serve instead of flax and wool; or of a substance resembling cotton, which is found in the barks of certain fruits. Of the finest thread they make the several ornaments which they wear; and of the coarsest they make sacks for several uses, and nets for fishing. The men also with several herbs, whose fibres are extremely compact and filamentous, and which they know how to handle dexterously, make pieces of kitchen furniture of all sizes. The smallest pieces serve for cups, the middling for plates, and sometimes as bonnets for the women, the largest for baskets for gathering the fruits, and sometimes for basons for boiling them in. But these vessels must be continually mov'd while they are on the fire, lest the flame should lay hold of them, which would soon burn them.

The Californians have a great deal of vivacity, and are naturally addicted to raillery. We find no form of government among them, nor almost any religion, or religious worship. They adore the moon, and in honour of her cut off their hair which they give their priests to be employed in various kinds of superstitions. Every family makes laws to itself at pleasure; and this is probably the reason why they so often fight with each other.

## C H A P. XIII.

*Of the chi-tse, the lit-chi, the boarchu, the cotton, and of the flowers of the willow, their virtues, qualities, medicinal properties, and the uses made of them in China.*

THE chi-tse or se-tse, is not less valuable on account of its beauty, than of the goodness of its fruit. In the provinces of Can-tong and Honan the fields are all covered with this kind of trees, some of which are as large as nut-trees. Those which grow in the province Tche-kiang bear better fruit than that produced elsewhere. The skin is always green without ever becoming yellow or reddish, like that of the others. These fruits continue fresh during the whole winter.

The leaves of the chi are of the same colour and form with those of the nut-tree, only they are less pointed and rounder at the extremity. The shade of it is not unwholesome like that of the nut-tree, under which it is dangerous to fall asleep. A Chinese author has these trees in so great esteem, that he advises the literati to have them near their closets, and to repose under the shade of them.

The shape of the fruit is not universally the same. Some are round, others oblong and oval; some are flat, and in a manner divided into two, almost like two apples joined in the middle. This fruit is as large as an orange or a lemon, and is first of a lemon, and then of an orange colour. The skin is tender, delicate, smooth, and even. The substance of the fruit is firm, and sourish to the taste, but becomes milder as it becomes riper. It at last becomes redish,



and acquires a sweet and agreeable taste. Before its perfect maturity, when the skin is taken off, the fruit has a certain mixture of acidity and sweetness, which is very agreeable, and gives it an astringent and salutary virtue.

This fruit includes three or four hard and stony pippins, which contain the seed. Some of them raised artificially are, without pippins, and these are most esteemed. These fruits rarely become ripe on the trees, and are gather'd in autumn. When they have arrived at their natural bulk they lay them on straw, or on hurdles to ripen.

This account is only true of the tree, which they take care to cultivate. As for the wild chi it has a crooked trunk, and its branches which are interwoven, have small prickles. Its fruit is not larger than a small apple.

The culture of this tree consists principally in the art of grafting it several times ; for when it has been thus grafted, the pippins of the fruit become much less, and the fruit sometimes grows without any pippin at all. The peach, or rather the alberge tree, when grafted on a chi, produces large yellow fruit of an exquisite taste.

The Chinese botanists pretend, that the fruit of the chi is naturally mild and cold. They say, first, that when it is eaten immediately after it is pull'd from the tree, it renders the hearing and smell acuter. Secondly, that it cures disorders of the abdomen, and removes heart-burns. Thirdly, that it keeps the mouth cool. Fourthly, that this fruit eaten by persons drinking their wine, which is a kind of beer made of rice, renders them sooner intoxicated than they would otherwise be. A famous Chinese author says, that this only holds true of warm wine, and that this fruit removes intoxication on other occasions.

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The same author quotes another more ancient, who enumerates seven very considerable advantages in the chi. First, it lives a great many years, constantly producing fruit, and decays very slowly. Secondly, it spreads a grateful shade to a great distance. Thirdly, the birds dare not build their nests in it. Fourthly, it is free from worms, and all other insects so prejudicial to other trees. Fifthly, when it has been covered with a hoar frost, its leaves assume various and agreeable colours. Sixthly, its fruit is not only beautiful to the eye, but grateful to the taste. Seventhly, when the leaves fall, they enrich the soil, as well as the best manure.

A third author, after some encomiums on this tree, pretends, that its fruit eaten crude, and too plentifully, produces defluxions ; and that tho' it is wholesome when dry, yet it will then give rise to flatulences, if eaten to excess. The desire of having it soon, often makes them gather it before it is ripe, but there are several ways of supplying this defect. If they keep it ten days in a proper place, it loses its natural acidity, and becomes sweet like sugar or honey. They also forward its maturity, by letting it lie two or three days in water, which they change often. But they say, that by being thus macerated, it assumes a cold quality. Some, in order to ripen it, bury it in salt, which is a means of removing its acidity, but does not render it the more wholesome. Others put it three or four times into a warm lixivium of ashes ; but this forc'd maturity has its inconveniences, especially with respect to sick persons.

The Chinese have a custom of drying this fruit almost in the same manner in which figs are dried. They make choice of the largest, and such as have no pippins ; or, if they have any, they dexte-

rously extract them : Then they press the fruit between their hands, to render them flat ; after which they expose them to the sun and dew. When they are dry, they put them in a large vessel, till they appear cover'd with a kind of white jelly, which is their spirituous juice, appearing on the surface. The juice thus prepar'd renders this fruit beneficial to those who labour under disorders of the lungs.

We must not forget a remark made by the same Chinese author, which is, that at the same meal you must not eat crabs and chit-se. He pretends, that there is an antipathy between them, and that by these two aliments there is a reciprocal combat produced in the stomach, which excites violent gripings, and often brings on a dangerous flux.

We shall now consider another tree, whose fruit, called lit-chi, is not less surprising, since in it we find a just temperature of heat, cold, and all the other qualities. It gives strength and vigour to the body, and vivacity, subtilty, and solidity to the genius. If it is eaten to excess, it is heating. The kernel gently roasted, rendered friable, reduced to a fine powder, and taken in the morning with warm water, is a certain remedy against the insupportable pains of the gravel, and nephritic colic. It is said, that before the hand of man begins to gather the lit-chi, no bird nor insect dares come near the tree ; but as soon as any one has touched the branches and the fruit, all sorts of voracious birds, large and small, come to prey upon the fruit, and do a great deal of damage. But there is nothing marvellous in this, since they only gather these fruits when they are ripe ; and of this the birds are as good judges as men.

When this fruit is intirely ripe, and allow'd to remain but one day longer on the tree, it changes its colour. If it is left two days, there is a change

in its taste; and if we wait till the third day, the change is still more remarkable. It is probably with this fruit as it is with the best European melons, since it must be eaten in the country where these trees grow. Could they preserve them fresh, and import them into Europe, as they have done some dried ones, the Europeans could only judge imperfectly of their goodness. The lit-chi brought to Peking for the emperor, and put up in tin vessels full of brandy, mix'd with honey, and other ingredients, have indeed an appearance of freshness, but lose a great deal of their taste.

We shall now speak of another tree more known in France, and in the last age brought thither from America. This is the acacia, which the Chinese call *hoaichu*. They pretend that the seeds taken from their pods, are successfully used in medicine, and that the flowers tinge paper with a very particular yellow colour.

With respect to the use made of these seeds in medicine, the following is a recipe given by a Chinese author. In the beginning of the winter, we must put the seeds of the acacia into as much of the gall of an ox as will totally cover them. Then after having dried the whole in a shade for a hundred days, we are every day to swallow one of these seeds after meals. The author assures us, that by continuing this practice daily, the sight becomes better, the hemorrhoids are cured, and hairs already grey with age are rendered black.

The second advantage of acacia arises from its flowers, which tinge paper or silk with a yellow colour. In order to succeed in this, take half a pound of the flowers gathered before they are full blown, and ready to fall. Toast them gently over a small clear fire, stirring them often in a copper pan, in the same manner as you toast the little buds

buds and leaves of new-gathered tea. When in toasting and stirring the flowers, you perceive them to assume a yellow colour, throw three small porringers full of water upon them, and boil the whole till it is inspissated, and the colour becomes deeper ; then pass the whole thro' a piece of coarse silk. When the liquor is express'd, add half an ounce of alum to it, and an ounce of calcin'd oyster-shells finely pounded. When the whole is incorporated, you will have the yellow tincture.

The Chinese dyers use the seeds and flowers of acacia to dye three different sorts of yellow. Having first toasted the acacia flowers, they add to them the seeds intirely ripe, and taken from the pods ; but they use much less of the seeds than of the flowers. If they intend to give the colour of ngo-hoang, which is the most lively, and are to dye five or six yards of silk, they use a pound of these flowers, and four ounces of alum, which quantities they augment in proportion to the length and breadth of the pieces they have to dye. To give the colour king-hoang, that is the gold-colour'd yellow, they first give the colour we have mention'd, and it being dry, they add a second colour, in which there is a little brasil-wood, They make the pale yellow in the same manner as the first, with this difference, that instead of four, they only add three ounces of alum.

Tho' the river-water is best for dying, yet all the waters of this kind are not equally good. That, for instance, which has a bad taste, is least proper for the purpose. However, if none else can be had, instead of one dip, the dyer must give the cloth two, before he can obtain the beautiful colour he wants.

When the flowers of acacia are toasted, they may, as well as the seeds, be kept during a whole year,

year, and may be employed in dying. But when both are thus kept, they must be longer boil'd than if they were recent. When they are old, their juice is more difficultly extracted, and less in quantity. Besides, the recent flowers always give the most beautiful colour.

The Chinese botanist teaches us the method of cultivating this tree, in such a manner as to make it grow quickly, and keep the better. When, says he, you have gathered the acacia seeds, dry them in the sun, and a little before the summer solstice throw them into water. When they have budded there, sow them in a fat soil, mixing hemp-seed with them. Both seeds will rise, but you must cut the hemp in a proper time, and tie the young acacias to small props. The following year sow hemp again, which may be also done the third year, in order to preserve these delicate plants from the injuries of the weather. When the shrubs are become strong, they are to be transplanted, and will become very beautiful trees.

A celebrated Chinese chymist highly recommends an artificial medicinal stone, to which great virtues are ascribed. Its composition is as follows.

Take twenty or thirty pints of the urine of a young man, about fifteen years of age, and of a sound and robust constitution. Put it into an iron vessel, and hold it over a clear charcoal fire, till you see a white froth on the surface; then pour into it, drop by drop, some of the fresh oil of turnips. Into a vessel full of this urine, pour a common tea-cup-full of this oil. The whole is to be boil'd till no more remains than a dry sediment of a blackish colour. This is to be reduc'd into a fine powder, after it is so sprinkled with oil, that the oil has penetrated all its parts. This powder is put upon a tile, over which is laid another, and both

both are covered and surrounded with burning charcoal. But two crucibles would be better, if a vent was left in the superior one. When you think all the humidity is dissipated, when no steam appears, and when what remains is cold, you are to take it and pound it in a mortar. When it is reduc'd to a very fine powder, it is to be put into a large porcelain vessel, which is to be carefully cover'd with a fine and clean mat. Over this there must be another covering of cloth, and over both a double one of coarse paper. Then boiling water is pour'd, drop by drop, thro' the coverings, which are left slack in the middle for this purpose. To finish the operation, they place the vessel with its contents in a copper pan, where the matter is bak'd again till it is dry and firm. This is the medicinal stone, which they call the autumnal stone.

It is used in China for the dropsy and the phthisis. Their physicians pretend, that it is an excellent remedy for disorders of the lungs. This is the reason why it is called the autumnal stone, not that the autumn is best for preparing it; for this denomination includes a more mysterious meaning. 'Tis a maxim in the Chinese medicine, that the noble parts of the human body have a particular relation to some of the four seasons of the year. Now as the autumn is the season, which, according to the Chinese, has a relation to the lungs, and as this medicine is salutary to those labouring under pulmonary disorders, it is therefore called the artificial autumnal stone.

But to return to botany. If we consider the willow thoroughly, we find, that at the opening of its flowers, there appears a kind of dry froth, with which they are generally cover'd. No doubt the internal fermentation reduces to a froth, that glutinous substance in which the seeds of the flowers

flowers as it were swim, in different cuds ; for the weather is cold or cloudy, it hinders the buds of the willow from putting out their whitish substance. If we put a bud, before it is opened, into a microscope, we perceive that the matter coming out of its point, resembles the glair of a beaten egg put into a froth, with which the whole flower is successively cover'd. It may happen that every seed included in its case, may swim in this glairous matter, and be nourish'd by it in the same manner as the chick is in a hen's egg. After this the most subtil part of the air penetrating this froth as soon as it is detached, gives it the form of network, by insinuating itself into the ramous parts, separating and raising them, and drying the glutinous humour, which united them, by which means they lose the figure of filaments.

The Chinese botanist says, that the flower of the willow is cover'd with small scales. When the flowers are dry without their seeds and froth, they in a microscope appear like the comb of wasps, full of open cellules. What is detach'd from the flowers, and floats in the air, is some times call'd their silk, their wool, or their cotton. When the weather is hot, such a quantity of these flakes fall from the willows, that they appear like a thick snow covering the ground. When they slip under the herbs, or the points of pretty high grafs, they make the ground resemble a meadow gently overflow'd by the limpid waters of some rivulet.

The Chinese author ingeniously sports with these appearances, and gives a full scope to his imagination. It is cotton, says he, which the willows spread, and yet it is not really so ; for I am all cover'd with it, and yet not cloth'd the warmer. It resembles snow, which darkens the air, and yet it is not really such ; for the sun ; when hottest,

cannot



cannot melt it. The swallow, which can fly in a gentle rain, surpris'd by this cloud of white flakes, has her flight so retarded, that she is oblig'd to stop. She thinks that she has appear'd before the spring. These willows, which yesterday seem'd young and verdant, to-day seem old and decayed. So sudden a change in a garden gives me a surprise, equal to that which would be produced by my seeing a friend yesterday with yellow hair, and a florid complexion, come to me to-day, with his countenance pale, and his hairs grey.

But passing these trifles of our Chinese author, let us come to something more serious. It is only the willow which casts burrs full of ramous parts, resembling cotton. These burrs are gathered, and preserv'd as well as the cotton. But it does not seem to be easy to card this spurious cotton, to separate the seeds from it, which are small and flat, and to spin it so as to render it fit for stuffs. Some Chinese authors, however, assert, that it was formerly us'd for childrens beds; and that when the cotton was scarce, they lin'd the winter-boots with it; as also mats, cushions and coverings. They also say, that near China, the people, of the flowers before they are blown, make a liquor which soon intoxicates. In times of famine, the poor people gather the dried bodies of the flowers, without the cotton and the seed, reduce them to a powder, and make broth of them for their support.

The Chinese physicians pretend, that by applying the dry flower, which is very combustible, and setting fire to it, they have an excellent remedy against the jaundice, and convulsions of the limbs. This, according to them, is equally proper for the cure of all ulcers, when apply'd in form of a desiccative and absorbent powder.

As for the cotton detach'd from it, and carried off by the wind, the Chinese physicians assert, that it cures all sorts of tetters, callosities, wounds made by iron, and the most obstinate chancers : that it accelerates the suppuration of wounds, stops hemorrhages and the lochia in women after difficult labours ; that it is good against the hardness of the spleen, and is moderately cold.

'Tis the common opinion in China, that there is a double transmutation of the cotton of the willow. The physicians say, and the vulgar believe, first, that if this species of cotton falls in a lake or pond, it is in a night's time chang'd into the herb leouping, which is seen floating on stagnant waters, and whose roots do not reach the bottom. Secondly, that every little flake come from the willow, and falling upon furs, or habits made of skin, is transform'd into a maggot or small worm. They quote many authors who assert the same thing, for which reason, when the willows are in flower, the Chinese are very careful not to expose their habits lin'd with skins.

Tho' the Europeans are far from believing a similar metamorphosis, yet they have the same experience, and use the same precaution with the Chinese, which proves the truth of the fact. But it is probable, that this flake is impregnated with small eggs of butter-flies, or small worms, which live upon the willows ; or it may happen, that the seed serves as aliment to the worms, or as a shelter to them, which must contribute greatly to multiply them in a skin.

As to the aquatic and floating plants, it is probable, that their time of blowing happens just with the falling of the willow flowers, and that these last only serve to unite several of these small plants, and render them sensible to the eye.

The

The Chinese botanist does not forget the manner of planting and cultivating these trees, in order to have them beautiful, and make them grow to a certain height. The willows are subject to be damaged by large worms, or to be blasted by a kind of caterpillar. He gives the following directions to preserve them from these insects. When a branch of willow is planted, we must make a hole two or three inches from the part which is to send off the roots. Thro' this hole we are to put a piece of fir long enough to extend two or three inches over each side. This kind of cross set in the ground has a good effect, since it will be more difficult to pull up new-set plants, because the cross-wood keeps them better than their roots would do. Some, in order to defend these new-planted trees from worms put into the holes in which they are planted a quarter of a head of garlick, and a piece of liquorice an inch long.

Another manner of planting these slips, is to turn the large end uppermost, and set the top in the ground. By this means a kind of willow will be produced, which they call the hairy willow, because its branches, except some of the largest, are small, and hang down like hairs. The literati love to have these in their small gardens before their studies.

It is surprising that the willow, tho' naturally light, porous, and subject to rot, is nourished and preserved in water, as well as piles of the hardest wood. This is what they constantly experience in Peking, where the wood of the willow is used in building the wells made in the gardens for watering flowers and pot-herbs. This invention of the Chinese may, perhaps, be relished in Europe.

When

When they are determined to make a well, they chuse a place where they think they can find water. They dig a round hole about three feet deep, and when the bottom is made very even they lay the basis of the well, on which they are to erect the masonry. This basis is made of flat pieces of the wood of the willow, at least six inches thick. and taken out of the trunk of a large and fresh tree. These pieces are joined to each other in a round form, and leave a large vacuity. On these large planks they build the masonry of the well, and in proportion as they raise it, they cover all the outside with the earth they have dug up. Then they dig in the middle, and in proportion as they advance they take all the earth equally from under the wood-work which sustains the masonry. This last gradually subsides, and is augmented above ground. This labour is continued and the workmen dig in the same manner, till they have found a sure and copious spring.

## C H A P. XIV.

*Discovery of the Caroline islands; system of the religion, and articles of faith of the inhabitants; their policy, government, and dexterity in fishing for whale.*

**I**N 1721, a foreign bark little different from those of the Marian islands, arrived in a desert place in the isle of Guahan on the eastern coast, which they call Tarafoso. In this bark there were twenty-four persons, eleven men, seven women, and six children. A Marian Indian fish-

ing on that coast, went and told the head of the borough, who forthwith went to the assistance of these poor islanders, and his good usage engaged them to come on shore.

Their bark was of a remarkable built. Her sail was a mat made of the leaves of the palm-tree. The stem and stern were of the same figure, and terminated in a point rising in form of a dolphin's tail. There were four small apartments in her, for the accommodation of passengers. The one was at the stem, the other at the stern, and the other two on the sides of the mast to which the sail was fixed, but they stood out from the bark like two wings. These apartments had roofs made of palm leaves in form of a canopy, to defend passengers from the rain and the heat of the sun. In the hold of the bark were several divisions for the stowage of the cargo and other provisions. What was surprising in this bark was, that there was no nail in her, tho' the planks were so tied together with cords that no water could get between them.

This bark was in company with four others belonging to the isle of Farroilep, and bound for that of Ulcea, but in their passage they were by a north-west wind dispersed, some one way, and some another.

The islanders have no other cloathing than a piece of stuff which they tie about their loins, and between their legs. Their chiefs have a kind of robe open on the sides, which comes as low as their knees. The women besides their girdle have a kind of petticoat which comes almost to their knees.

The nobility paint their bodies, and pierce their ears, in order to fix in them flowers, aromatic herbs, cocoa seeds, or glass, if they can get it.

In

In general the people are tall and well proportioned. Most of them have curled hair, large noses, full and piercing eyes, and thick beards. They are of different colours, since some have that of the genuine Indians, while others seem to be mungrels, begot between the Spaniards and the Indians. There are also mulattos among them, and these are the offspring of the negroes and the Indians.

The Caroline islands lie between the sixth and eleventh degree of north latitude, and thro' thirty degrees of latitude run to the east of the cape of the Holy Ghost. These islands are divided into five provinces, speaking different languages, each of which seems to be derived from one, which is probably the Arabic.

The islanders have almost no ideas of religion. They live without any publick worship, and are generally destitute of the knowledge of reasonable beings. They, however, acknowledge the existence of good and bad spirits; but according to their opinion these spirits are corporeal, and have each two or three wives. They believe them to be celestial beings, different from those which inhabit this world.

This is the foolish system traditionally handed down from their fathers. The oldest of these spirits Sabucour, whose wife is called Halmecul, who had a son, whom they call Eltulep, which in their language signifies the great spirit, and a daughter called Ligobund. The son married Letenhieuel, who was born in the isle of Ulcea. She died in the flower of her age, and her soul forthwith ascended into heaven. Eltulep had a son by her, called Lugueileng, which signifies the middle of heaven. He is rever'd as the great lord of heaven, of which he is presumptive heir.

Eltulep, however, not satisfied with one child, adopted Refchahuileng, a very accomplished man, and a native of Lamaree. They say, that being disgusted at this world he ascended into heaven, in order to enjoy the pleasures of his father; that his mother is now in Lamaree, in a decrepit old age; and that he descended from heaven to the middle region of the air, in order to converse with his mother, and communicate the heavenly mysteries to her.

Ligabund, sister of Eltulep, finding herself in the middle of the air, descended to the earth, and brought forth three children. She was surprized to find it parched and barren; but at her powerful command it was covered with herbs, flowers, and fruit-trees. She enriched it with all kinds of verdure, and peopled it with rational creatures.

In this infancy of the world death, according to them, was unknown, since it was only a short sleep. People quitted life on the last day of the decrease of the moon, and as soon as she again appeared on the horizon, they wak'd, as it were, from a pleasant sleep. But one Erigiregers, an evil spirit, who sported with the happiness of men, procured a kind of death, against which there was no remedy, so that when people died, they remained for ever dead. They also call him Elus-melabut, which in their language signifies a malevolent spirit; whereas they call the other spirits Elus-melatus which signifies benevolent spirits. Among the number of bad spirits they place one Merogrog, who being banished from heaven for his misbehaviour, first brought fire into the world.

Langutleng, Son of Eltulep, had two wives, the one in heaven, by whom he had two children, Carrer and Melibiau, and the other on this earth, born at Folalu, in the province of Hougoleu, by  
whom

whom he had a son called Oulesta. This young man knowing that his father was a celestial spirit, and being impatient to see him, like Icarus, took flight to heaven; but he had no sooner mounted into the air, than he fell down. Tho' this fall discouraged him so much as to make him bitterly lament his fatal destiny, yet he did not desist from his attempt. He kindled a great fire, by the smoke of which he was a second time carried up into the air, and conveyed into the arms of his father.

The same Indians say, that in the island of Foulalu there is a small fresh-water pond in which the gods bath themselves; and out of respect to this sacred bath, none of the islanders dare approach it, for fear of incurring the displeasure of their gods. This story is not unlike that of Diana and Acteon, who incurred the displeasure of that goddess by his desire of seeing her in her bath. They think that the sun, moon, and stars have reasonable souls, and are inhabited by numberless celestial beings. This notion favours of the fables of Homer, and the errors of the Origenists.

This is the doctrine of the inhabitants of the Caroline islands, but they are not distractedly fond of it; for tho' they acknowledge all these fabulous deities, yet they have neither temples, idols, sacrifices, offerings, nor any external worship. They only pay a superstitious worship to some of their dead. They throw their carcases as far as they can into the sea, to serve as food to the tiburrans and whales. But when any person of distinction dies, or any one whom they loved, they perform his obsequies with pomp, and great demonstrations of grief.

As soon as the person dies, they paint all his body yellow. The friends and relations flock



about the corpse to bewail the common loss. On this occasion nothing but hideous cries and groans are heard. These are succeeded by a profound silence, and a woman with a voice interrupted by sighs, pronounces the funeral elegy of the deceas'd. She extols his beauty, his nobility, his agility in dancing, his skill in fishing, and all his other valuable qualities. Those who want to give more sensible proofs of their grief, cut off their hair and their beard, and throw them upon the corpse. They observe a rigid fast all that day, but eat heartily at night.

Some of them bury the dead in a small stone building in their own houses, while others inter them far from their habitations, and inclose the grave with a stone wall. They place several kinds of aliments near the deceast, being persuaded that his soul sucks and is nourished by them.

They believe that there is a paradise, where the virtuous are rewarded, and a hell where the wicked are punished. They say that the souls of those who go to heaven, on the fourth day return to the earth, and remain invisible among their relations.

There are priests and priestesses among them, who pretend to have a commerce with the souls of the deceast. These priests with full authority declare who go to heaven, and who to hell. They honour the first as beneficent spirits, and call them Tahuput, which signifies holy patron. Every family has their Tahuput, to whom they address themselves in their exigencies. If they are sick, undertaking a journey, going to fish, or employed in the culture of their lands, they invoke their Tahuput, and of him ask for the restitution of their health, the success of their journey, the abundance  
of

of their fish, and the fertility of their ground. They make presents to him, which they suspend in the house of their Tamoles, either from interest to obtain the favour they ask of him, or from gratitude to thank him for the kindnesses he has done them.

The inhabitants of the isle of Yap have a more ridiculous and barbarous worship, since a kind of crocodile is the object of their veneration. There are among them inchanters who pretend to have a commerce with the evil spirit, and by his means procure diseases and even death to those they want to get rid of.

The plurality of wives is not only permitted to these islanders, but is also look'd upon as a mark of honour and distinction. They say that the Tamol of the island of Huogolen had nine wives. Tho' they abhor adultery as a great crime, yet he who is guilty of it obtains a pardon by making some present to the husband of the woman with whom he committed it.

The husband may divorce the wife when she violates the conjugal ties. The wife may also divorce the husband, when he ceases to be agreeable to her. In this case they have certain laws for the disposal of the effects. When a man dies without issue his widow marries his father.

When they go a fishing they take no provision in their barks. Their Tamoles assemble in February, and judge by way of lot whether the fishing will be happy and plentiful. This lot consists in certain knots which they make on palm-tree leaves. These they count one after another, and the odd or even number determines the good or bad success of the enterprize.

Notwithstanding the rudeness and barbarity of these islanders, they have a certain policy which

shews them to be more rational than most of the other Indians, who have little more than the human form. The authority of the government is divided among several noble families, the chiefs of which are called Tamols. There is also in each province a principal Tamol, to whom all the rest are subject.

These Tamols let their beards grow very long in order to procure the greater respect. They command in an arbitrary manner, speak little, and affect a grave and serious air. When a Tamol gives an audience he sits on a high table. The people as soon as they come in sight of him walk with their heads as low as their knees, and when they are come quite to him they sit down on the ground, and with down-cast eyes receive his orders with the most profound respect.

When the Tamol dismisses them they retire bending their bodies in the same manner, till they are entirely out of his presence. His words are rever'd as so many oracles. A blind obedience is paid to all his orders; and people kiss his hands and feet when they ask any favour of him. The ordinary houses of the islanders, are only low huts covered with palm-tree leaves. These of the Tamols are built of wood, and adorn'd with such paintings as the natives can produce.

They do not punish crimes either by imprisonment, or the infliction of corporal punishment, but only banish the criminals into another island. In every town there is a house for the education of boys, and another for that of girls; but they only learn some vague principles of astronomy, on account of their use in navigation. The master has a globe on which the principal stars are marked, and  
teaches

teaches his scholars the point of the compass by which they ought to steer.

The principal occupation of the men is building barks, fishing, and tilling the ground. The employment of the women consists in the management of the family, assisting their husbands when they sow the ground, and preparing a kind of wild plant, and a tree call'd balibago for making stuffs. As they have no iron, they make use of wedges and hatchets of stone to cut down the wood ; if by chance any foreign vessel should leave any pieces of iron, they belong to the Tamols, who order utensils to be made of them in the best manner possible. These utensils are a fund from which the Tamols reap a considerable advantage, since they lend them out at a very high rate.

They bath themselves in the morning, at noon, and in the evening. They go to rest at sun-set, and get up early in the morning. The Tamol never goes to sleep without a concert of music form'd by a croud of young people, who assemble round his house, and in their manner sing certain songs, till they are ordered to desist.

During the night, they from time to time assemble, and dance and sing before the house of their Tamol. They dance to the voice, for they have no instrumental music. The beauty of their dancing consists in the exact uniformity of the motions of the body. The men place themselves opposite to each other. After this they move their heads, their arms, their hands and their feet in concert. The ornaments with which they adorn themselves, give, in their opinion, a new beauty to this kind of dance. Their heads are cover'd with feathers or flowers. They have aromatic herbs hanging from their nostrils, and palm leaves curiously interwoven, fix'd to their ears ; on their arms,

arms, hands and feet, they have other ornaments proper to them.

The women have a kind of diversion more suited to their sex. They set themselves down, and looking on each other, begin a pathetic and moving song, accompanying the sound of their voices with the motions of their heads and arms, for which reason, this diversion is in their language call'd *tanger-ifaifil*, which signifies the complaint of the women.

At the end of the dance, when the Tamol affects to be liberal, he holds up in the air a piece of stuff, which he shews to the dancers, and which is given to him who first lays hold of it.

Besides dancing, they have several other diversions, in which they give proofs of their dexterity and strength, in handling the spear, throwing stones and balls up into the air, and each season has a diversion peculiar to itself.

Whale-fishing is a charming spectacle to these islanders. Ten or twelve of their islands dispos'd in a circle, form a kind of harbour where the sea enjoys a perpetual calm. When a whale appears in this gulph, the islanders forthwith getting into their canoes, and keeping toward the main sea, advance gradually, frightening the animal, and driving it before them, till they have got it into the shallow water, not far from land. Then the most skilful of them throw themselves into the sea, and strike their spears into the whale, while others intangle him with large ropes, which are fix'd on the land. Then there are loud acclamations of joy, among a numerous crowd of people, whose curiosity has brought them thither. They drag the whale to land, and the labour of the day is concluded with a great feast.

When there are any enmities among these islanders, they generally appease each other by some pre-

presents. 'Tis thus that single men determine their quarrels; but when the enmities are public, between two boroughs, for instance, nothing but war can put an end to them. They have no other arms but stones, and spears arm'd with fish-bones. Their method of fighting resembles a duel, since only one man engages with another.

When the differing parties resolve to come to a decisive action, they assemble in a large field, where the troops on both sides form a squadron of three ranks. The youth compose the first rank, the second consists of those of a higher stature, and those most advanc'd in years form the third. The combat begins in the first rank, where they fight man to man with stones and spears. When any one is wounded so as to retire, his place is fill'd by one of the second rank, and if he is also disabled, by one of the third. The war is terminated by triumphal arches, rais'd by the victors, who insult over the vanquish'd.

The inhabitants of the isle of Ulcea, and of the adjacent islands, are more civiliz'd and reasonable than the others. Their air and manners denote greater decency. They have a certain gaiety of spirit, but are reserv'd and circumspect in their words. They are extremely compassionate, and ready to commiserate the infirmities and miseries of their neighbours.

They have a great many mungrels, and some mulattos and negroes, whom they employ as their servants. It is probable that the negroes come from New Guinea. As for the whites, their origin in this part is as follows.

Martin Lopez, commander of the first vessel, which sail'd from New Spain to the assistance of the Philippine islands in the year 1566, conspired with twenty eight more, to put the rest of the  
crew

crew into a desert island, make themselves masters of the ship, and go a pyrating on the coasts of China. The plot, however, was discover'd, and, to prevent the design of these ruffians, the crew left them on an island of Barbary, situated to the east of the Marian islands. It is not to be doubted, but these rebels were convey'd into one of the Caroline islands, where they married the Indian women, who brought forth a set of mungrels who have multiplied extremely in these islands.

These islanders live entirely on fruits, roots, and fish. They have hens, and other birds, but no quadrupeds. The soil produces neither rice nor wheat, nor barley, nor Indian corn. In these islands there are many woods, the timber of which is excellent for building ships.

## C H A P. XV.

*Of the luminous particles observ'd on the surface of the sea; of the sea-rainbow, and the exhalations form'd in the night-time.*

**W**HEN a ship is under full sail, we often see a great light in her rake, that is in the water she has run thro', and, as it were, broken in her passage. Those who do not look narrowly at this light, often attribute it to the moon, the stars, or the lanthorn on the stern. But by a little attention, this mistake is easily rectified, since the light is greatest when the moon is under the horizon, when the stars are cover'd by clouds, when the candle in the lanthorn is extinguish'd, and when no other light appears on the surface of the sea.

This light is not always equal, since, on some occasions, it is hardly discernible; sometimes it is clear,

clear, and at others languid ; sometimes it is far extended, and at others not.

This light is sometimes so great, that we may read by it, nine or ten feet above the surface of the water. As for its extent, sometimes the whole rake appears luminous for the space of thirty or forty feet ; but the light decreases in proportion as it is farther from the ship.

Sometimes we may in the rake easily distinguish the luminous from the obscure parts ; on which occasion the rake appears like a beautiful river of milk.

When we can distinguish the luminous from the other parts, we perceive that they are not all of the same figure, since some are only sparks, while others appear as large as the stars do to us. Some are globular, and one or two lines in diameter. Others are globes as large as a man's head. These luminous bodies are often form'd into squares, three or four inches long, and one or two broad. Sometimes these bodies of different figures are seen at once. Sometimes the rake of the vessel is full of luminous vortices, and oblong squares. At other times, when the motion of the vessel is slow, these vortices suddenly appear and disappear like lightning.

Not only the rake of a ship produces this light, since the motion of fish affords a light sufficient to distinguish their bulk and species. Sometimes a numerous shoal of these fish, when sporting in the sea, excite a kind of artificial, but very agreeable fire. Very often a rope oppos'd to the motion of the waves, is sufficient to render them luminous.

If sea-water is but stirr'd in the dark, we find an infinite number of shining particles in it. If we dip a piece of linen in it, and wring it in the dark,



dark, we see the same thing, and also perceive a number of sparks flying out of it, when we but shake it after it is half dry.

When one of the sparks is form'd, it lasts a long time ; and if it falls on any solid body, such as the edge of a vessel, it will last for several hours.

It is not always when the sea is most agitated, or when the ship goes fastest, that most of these sparks appear. Neither is it the simple shock of the waves against each other, which produces them, since the action of the waves on the shore sometimes generates a great quantity of them. At Brasil the shore sometimes appears all on fire with these sparks.

The production of them depends in a great measure on the quality of the water, and, generally speaking, this light is greatest, when the sea is most foaming ; for at full sea the water is not every where equally pure. Sometimes a piece of linen dip'd in the sea comes out all over glutinous. It is observable, that when the rake is most shining, the water is most viscid and fat. A cloth dip'd in this water gives most light when it is mov'd.

In some parts of the sea there are parcels of matter of different colours, sometimes red and sometimes yellow, floating on her surface. It appears like the sawings of wood, and the sailors say it is the fry or seed of the whale ; of this however we cannot be certain. When water is drawn out of the sea in those parts, it is found to be very viscid. The sailors also say, that in the northern seas there are large shoals of this fry, which sometimes appear quite luminous in the night-time, even when they are not agitated by the motion of any ship or fish.

To prove that the water is the more luminous in proportion to its viscosity, the following experiment has been made. They one day catch'd a fish, which some took to be a bonite. The inside of the throat of this fish, in the night-time, appeared like a live coal ; so that without any other light, a person could have read as well as by the most luminous rake. The throat was full of a viscid matter, with which, when a bit of wood was besmear'd, it forthwith became luminous ; but as soon as the humour was dried, the light was extinguish'd.

Let us now examine whether all these particularities may be applied to the system of those who take the principle of this light to be the motion of the subtil matter, or of globules occasion'd by the violent agitation of the salts.

Let us add some observations on the iris, or rain-bow of the sea. 'Tis principally after violent tempests that such rain-bows appear with greatest splendor. 'Tis true the celestial has this advantage over the sea iris, that its colours are more lively, distinct and various. In the sea iris there are hardly more than two colours, a dark yellow towards the sun, and a pale green on the opposite side. The other colours are not lively enough to be distinguish'd. In recompence for this, the sea rain-bows are much more numerous, since at mid-day we sometimes see twenty or thirty of them at a time, in a situation opposite to that of the celestial iris, that is, with their arches turn'd towards the bottom of the sea.

We must not forget these exhalations, which being inflam'd in the night-time, form a streak of light in the air. These exhalations in the Indies leave a much more extensive streak than in Europe. Some of them seem to be real rockets.  
They

They appear very near the earth, and diffuse a light like that of the moon on the first days of her Increase. Their fall is slow, and they describe in a curve line falling.

## C H A P. XVI.

*Of the origin of musk, where it is form'd, and of the nourishment of the animal which produces it.*

**H**ITHERTO people have talk'd differently of the origin of musk. Some authors pretend, that it is form'd in the navel of the animal; but they are certainly mistaken, since it is form'd in the bladder. This animal is a sort of small goat, which the Chinese call hiang-tchang-tse, that is to say, the odoriferous or musk-goat. Tchang-tse signifies goat, and hiang properly signifies odour.

On the east of Peking is a long ridge of mountains, where there are great numbers of these musk-goats. The people who kill them sometimes sell the flesh by itself, and dispose of the musk to those who deal in it. They cut out the bladder of this animal, and lest the musk should evaporate, tie it tight about the neck, and when they want to preserve it for a curiosity, they dry it.

The musk adheres to the internal coat of the bladder, in form of a salt. That in grains is the most valuable, and is call'd theou-panhiang. The other, which is call'd mi-hiang, is less esteem'd, and much smaller in the grain. The female bears no musk, or at least what in her resembles that substance has no smell.

Serpents are the most common food of these goats ; and tho' these serpents are of an enormous bulk, yet the goats easily kill them, because as soon as a serpent is within a certain distance of a goat, the former is by the smell of the musk so stupified, that it can move no more.

This is so evident, that the country people who go to seek for wood, or make char-coal on the mountains, have no better secret to preserve themselves from the stings of these serpents, which are very dangerous, than to carry two or three grains of musk about them. In this case they sleep securely after dinner, and if any serpent should come near them, it is forthwith laid asleep by the smell of the musk, and can go no farther.

## C H A P. XVII.

*The method of giving a lustre to the gold laid on porcelain ; the different kinds of varnishes and colours given to the porcelain ; the method of preparing these varnishes and colours ; new designs of porcelain works ; manner of embossing porcelain.*

**A**S gold laid upon porcelain is, in process of time, effac'd, and loses a great deal of its lustre, they restore its splendor, by wetting the porcelain with pure water, and rubbing it with an aggate stone ; but they must take care to rub the vessel in the same direction, for example, from the right to the left.

The lips of the porcelain are principally subject to scale off. To remedy this inconveniency, they

fortify them with a certain quantity of bamboo-coal pounded, which they mix with the varnish that is laid on the porcelain, and which gives it a grey or cineritious colour. Then with the pincers they make a border of this mixture round the porcelain already dry, putting it on the wheel. When it is time they apply the varnish to the border as they do to the rest of the porcelain, and when it is bak'd, the edges are extremely white. As there is no bamboo in Europe, its place may be supplied by willow coal, or rather that of elder, which more approaches to bamboo.

It is to be observ'd, first, that before the bamboo is reduc'd to coal, its green skin must be taken off, because the ashes of that skin make the porcelain break in the furnace. Secondly, That the workman ought not to touch the porcelain with greasy or oily hands, since by this means the part touch'd would infallibly crack in the baking.

In the fourth chapter, when speaking of the colours laid on the porcelain, we have said, that there was a red one blown upon the porcelain, and explain'd the manner of applying that colour. But we did not there observe, that there was also a blue one blown, in which it is easier to succeed. The Chinese workmen agree, that if it was not too expensive, they could also blow gold and silver upon porcelain, of a black or blue ground, that is, diffuse gold or silver equally all over it. This sort of porcelain of a new taste could not fail to please.

They blow the varnish as well as the red. They have for the emperor made works so delicate and fine, that they were oblig'd to place them on cotton, because they could not handle pieces so tender, without danger of breaking them; and as it is not possible to plunge them in the varnish, without touching

ouching them with the hand, they blow the varnish upon them.

'Tis to be observ'd, that in blowing the blue, the workmen take a precaution to preserve the colour, which does not fall on the china, and to lose as little of it as possible. This precaution is to place the vessel on a pedestal placed over a large piece of paper, which serves for some time. When the azure is dry, they take it off, by rubbing the paper with a small brush.

They have found a new substance proper to enter the composition of porcelain. This is a stone or species of chalk called hoache, which the Chinese physicians use in a ptisan, which they say removes weariness, is aperient and refreshing. They take six parts of this stone, and six of liquorice, which they pulverise. They put half a spoonful of this powder into a large draught of fresh water, which they order the patient to drink. They pretend, that this ptisan refreshes the blood, and temperates internal heats. The workers in porcelain have thought fit to employ this stone instead of the kaolin before - mentioned. Perhaps such parts of Europe, where kaolin cannot be found, may furnish the stone hoache. It is call'd *hoa*, because it is glutinous, and resembles soap.

The porcelain made with the hoache is rare, and much dearer than the other kinds. It has an extremely fine grain, and with respect to the work of the pencil, if we compare it with the ordinary porcelain, it is almost what vellum is to paper. Besides, this porcelain is extremely light, which surprises a person accusom'd to handle other porcelains. It is also more brittle than the common sort, and the true degree of baking it is very hard to be guess'd at. Some workmen do not use the hoache for the body of their work, but make a

thin glue of it, in which they dip the porcelain when dry, before it receives the colours and the varnish, by which means it acquires some degree of beauty.

They use the hoache in the following manner. First, when they have taken it from the mine, they wash it with river or rain-water, to separate it from the yellow earth which adheres to it. Secondly, they break it, and put it into a vessel to dissolve, after which they prepare it in the same manner with the kaolin. They affirm, that porcelain may be made of the hoache alone, without any other mixture. Some Chinese workmen however say, that to eight parts of hoache they put two of petunse, and that in other respects they proceed in the same manner as in making ordinary porcelain with petunse and kaolin. In this new species of porcelain the hoache is in place of the kaolin, but it is much dearer than the other. The load of kaolin costs only twenty pence, whereas that of hoache comes to a crown. Thus it is not surprising, that this should be sold dearer than the common porcelain.

There is another observation to be made on the hoache; when they prepare it, and form it into small squares like the petunse, they dissolve in water a certain quantity of these squares, of which they form a very clear glue or cement. In this they dip the pencil, and draw various designs on the porcelain, and when it is dry they give it the varnish. When the porcelain is bak'd we perceive these designs to be of a different white from the rest. They seem to be a delicate steam spread on the surface. The white of the hoache is call'd siamyane; or ivory white.

They paint figures on porcelains with chekao, as well as with hoache, which gives it another species

species of white colour; but the chekao has this peculiar to itself, that before it is prepar'd like the hoache, it must be toasted on the hearth, after which it is broken, and prepar'd in the same manner with the hoache. They throw it into a vessel full of water, and agitate it there. They at different times take off the cream which floats upon it; and when all this is done, they find a pure mass, which they employ in the same manner as the purified hoache. The chekao cannot serve as the body of the porcelain. Hitherto nothing but the haoche has been found to supply the place of the kaolin, and give solidity to the porcelain. If, according to the Chinese workmen, they were to put more than two parts of the petunse to two parts of the hoache, the porcelain would infallibly be destroy'd in baking, because its parts are not sufficiently united.

We have not as yet spoken of a kind of varnish call'd tse-kin-yeou, that is, burnish'd varnish of gold. We might rather call it varnish of a bronze, or coffee-colour, or of the colour of a wither'd leaf. This varnish is of a late invention, and in order to make it, they take common yellow earth, and manage it in the same manner they do the petunse. When it is prepar'd they employ only the most delicate part of it, which they throw into water, and which forms a glue as liquid as the ordinary varnish, call'd peyeou, which is made of pieces of rocks. These two varnishes, the peyeou, and the tse-kin are mix'd together, and for this purpose they ought to be render'd equally liquid. Of this they make a tryal, by plunging the petunse into both; and if each of the varnishes penetrates its petunse, they judge them equally liquid, and proper to incorporate with each other. They also mix with the tse-kin varnish or oil of quick lime,



and ashes of ferns, prepar'd in the same manner as directed in the fourth chapter, and of the same liquidity with the peyeou; but they mix more or less of these varnishes with the tse-kin, according as they want it deeper or fainter. This may be known by several tryals; for example, mix two cupfuls of the tse-kin, with eight of the peyeou; then to four cupfuls of this mixture add one cupful of the varnish of lime and fern.

'Tis not long since they found the secret of painting the porcelain with the tseui, which is of a violet colour, and gilding it. They have tried to make a mixture of gold leaf with the varnish and powder of flints, which they applied in the same manner as the red, with oil; but this varnish does not succeed, and they have found that the varnish of the tse-kin had more beauty and splendor.

Formerly they made cups to which they gave the outside a gilded varnish, and the inside the pure white varnish. They afterwards varied, and to a cup or vessel they intended to varnish, they in one or two parts applied a square or circle of paper; and after having laid on the varnish, they rais'd the paper, and painted the unvarnish'd space red or blue. When the porcelain was dry, they gave it the usual varnish, whether by blowing or otherwise. Some fill these empty spaces with a ground of blue or black, in order to apply the gilding after the first baking. In this respect we may imagine several combinations according to our fancy.

They have also invented a new sort of porcelain which is of an olive colour, and which they call long-tsen. This species was formerly called tshinko, the name of a fruit among them, whose colour resembles that of olives. This colour is given to the porcelain, by mixing seven  
cups

cups of the varnish call'd tse-kin, with four cups of peyeou, two cups, or thereabouts, of the oil of quick-lime and ferns, and one of tseouyeou, which is an oil obtain'd from flints. The tseouyeou makes a large quantity of veins appear on the porcelain. When they use it alone, the porcelain is brittle, and without sound when struck ; but when it is mix'd with the other varnishes, it is variegated by beautiful small veins, and neither renders the porcelain less sonorous nor more brittle than the common sort.

We must not omit one thing, which is, that before they give the varnish to the porcelain, they polish it, and smooth all its smallest inequalities. This is done by a pencil made of very fine feathers, which they moisten with water, and gently pass it over the whole ; but it is principally with the fine china that they use so much pains.

The shining or reflecting black is given to the porcelain by plunging it in a liquid mixture compos'd of prepar'd azure. In this case it is not necessary to employ the finest azure, but the composition must be a little thick, and mix'd with the varnish of peyeou and tse-kin, adding a little of the oil of lime, and of the ashes of fern. For example, with ten ounces of azure pounded in a mortar, we must mix one cup of tse-kin, one cup of peyeou, and two cups of the oil of ferns, burnt with quick-lime. This mixture carries its varnish with it, so that it is not necessary to give it another. When they bake this species of black china, they place it in the middle of the furnace, and not near the vault where the fire has the greatest force.

It is not true, that the red laid on with oil, called the yeou-ci-hunc, is drawn from the red of copperas, such as that which is employ'd in painting the rebak'd porcelain red. This red laid on with oil is made of the grains of red copper, and of

the powder of a certain stone or flint of a redish cast. 'Tis thought that this stone is a kind of alum employed in medicine. The whole is pound-ed in a mortar, along with the urine of a young man, and the oil of peyeou. This mixture is ap-plied to the porcelain, before it is bak'd, and they give it no other varnish. They must take care during the baking, that the red colour fall not to the bottom of the vessel. The Chinese workmen say, that when they want to give this red to the porcelain, they do not make use of the petunse to form it, but that in its stead, they employ together with the kaolin a yellow earth, prepar'd in the same manner with the petunse. It is probable that such an earth is more proper to receive this kind of colour.

Perhaps the reader will be glad to know how the grains of copper are prepar'd. In China there is no silver coin, since in commerce they use it in lumps, and there are a great many pieces bad, There are however certain occasions on which it is necessary to refine these bad pieces, when, for ex-ample, taxes or similar contributions are to be paid, Then they have recourse to workmen, whose only business it is to refine the silver in furnaces made for that purpose, and to separate it from the copper and lead. Before the melted copper is harden'd and congeal'd, they take a small broom, which they dip slightly in water; then by striking on the handle of the broom, they sprinkle the melted copper with water. A pellicule is form'd on the surface, which they take off with iron pincers, and plunge it in cold water, where the grains are form'd, and multiplied in proportion as they re-iterate the operation. It is evident, that if they employ'd aquafortis to dissolve their copper, the powder would be more proper for making the co-  
lour

lour of which we speak. But the Chinese are unacquainted with aquafortis and aqua regia, and their inventions are all extremely simple.

They have executed designs which were thought impracticable. These are urns three feet high and more without the cover, which rises a foot high like a pyramid. These urns consist of three different pieces, so elegantly join'd, that they seem to make but one.

There are also pieces of porcelain which they call yao-pien, which signifies transmutation. This transmutation is caus'd either by the defect or excess of the heat, or by other causes which are not easily discover'd. These pieces which have not succeeded agreeably to the intention of the workman, and are the pure effects of chance, are not less beautiful and valuable than the others.

A workman intended to make vessels with red flowers blown; a hundred pieces were entirely lost, while only one came out of the furnace, perfectly like a species of aggate.

If they would run the risk, and be at the expence of different tryals, they might effectually discover the art of making what chance at that time produced. For this reason they have thought fit to make porcelain of a shining black, which they call oukom. The caprice of the furnace has determin'd them to this research, in which they have succeeded.

When they want to give a varnish, which renders porcelain extremely white, they add to thirteen cups of peyeou, one cup of the oil of fern ashes as liquid as the peyeou. This varnish is strong, and ought not to be given to the porcelain which is to be painted blue, because after baking, the colour would not appear thro' the varnish. The porcelain which has got the strongest varnish, may with-  
out

out any dread be expos'd to the greatest heat of the furnace. Thus they bake it all white, either with a view to keep it in that colour, or to gild it, or paint it in different colours, and then bake it a second time. But when they want to paint porcelain blue with a design that the colour should appear after the baking, they only take seven cups of peyeou, with one cup of varnish, or of the mixture of lime and fern ashes.

'Tis to be observ'd in general, that the porcelain whose varnish contains a great deal of fern ashes, ought to be bak'd in the most temperate part of the furnace, that is, either after the three first ranks, or at the bottom, about a foot or a foot and a half high. If it was bak'd at the top of the furnace, the fern ashes would be fus'd with precipitation, and fall to the bottom of the porcelain. The case is the same with the red laid on with oil, the blown red, and the long-tfiven, on account of the grains of copper contain'd in these varnishes; on the contrary, in the top of the furnace they bake the porcelain, to which they have only given the tfoui-yeou, which is the varnish that gives the porcelain so many veins, that it seems to consist of pieces join'd together.

The red of copperas, laid on the rebak'd porcelains, is made in the manner mention'd in the fourth chapter, with copperas call'd tfao-fan. But before we give the method of composing this colour, we shall first explain the proportion and measure of the Chinese weights.

The kin or Chinese pound consists of sixteen ounces, which they call leams or taels.

The leam or tael is a Chinese ounce.

The tfien or mas is the tenth part of the leam or tael.

The fuen is the tenth part of the tsien or mas.

The by is the tenth part of the fuen.

The hoa is the tenth part of the by.

To a leam or tael of cerufs they add two mas of this red. They pass the cerufs and the red thro' a sieve, and mix them together dry. Then they incorporate them with water impregnated with common glue, reduc'd to the consistence of mouth-glue. This glue fixes the red to the porcelain, and prevents its melting. As the colours, if laid on too thick, would produce inequalities on the surface, they now and then dip the pencil in water, and then in the colour which they intend to use.

In order to obtain a white colour, to a leam of cerufs they add three mas and three fuen of the powder of the most transparent flint calcin'd, after having luted them in a vessel of porcelain, which they bury in the sand of the furnace before they heat it. This powder ought to be impalpable. They use simple water without any mixture of glue, in order to incorporate it with the cerufs.

In order to make the deep green, they add to one tael of cerufs three mas and three fuen of the powder of flint, with eight fuen, or near a mas of tom-hoa-pien, to make the green. They must wash it well, and carefully separate the grains of copper which are mix'd with it, and which are not proper for the green. They only employ the scoriæ, that is to say, the parts of the metal which are separated when they work it.

As for the yellow colour, it is made by adding to a tael of cerufs three mas and three fuen of powder of flint, and one fuen and eight by of red, which has not been mix'd with cerufs. To make a beautiful yellow, you must add two fuen and a half of this primitive red.

A tael

A tael of cerufs, three mas and three fuen of powder of flint, and two by of azure, form a deep blue of a violet cast. Some workmen add eight by of azure.

The mixture of green and white, for example, one part of green added to two of white, makes the water-green which is very clear.

The mixture of green and yellow, for example, two cups of deep green added to one of yellow, produces the colour, which resembles a leaf somewhat faded.

In order to produce black, they dilute the azure in water, but the solution must be very thin. They mix with it a little common glue macerated in lime water, and boiled to the consistence of mouth-glue. When with this black they have painted the porcelain which they intend to bake a second time, they cover the black parts with white. In the baking, this white is incorporated with the black, just as the common varnish is with the blue of the common porcelain.

There is another colour called tfin, which is prepared of a stone or mineral resembling Roman vitriol. It is probable that this substance is taken from some lead mine, and that carrying imperceptible particles of the lead along with it, it insinuates itself into the porcelain without the help of the cerufs, which is the vehicle of the other colours given to the rebak'd porcelain.

'Tis of this tfin that they make the deep violet. It is found at Cantong and at Peking, but that found at the last of these places is by far the best. It is sold at seven shillings and six pence a pound. The tfin is fus'd, and when it is so, silver-smiths by way of enamel lay it upon silver works. They will put, for instance, a small circle of tfin about a ring, or they will enchase it by way of a stone.

stone. This species of enamel comes off at last, but they endeavour to prevent this by laying it on a slight ground of mouth or common glue.

The tfin, as well as the other colours we have mentioned, is only used for the rebaked porcelain. The tfin is prepared in the following manner. They do not toast it as they do the azure, but break it and reduce it to a very fine powder. Then they put it into a vessel full of water, which they agitate a little. Then they pour out the water, in which there is some nastiness, and keep the crystal which has sunk to the bottom of the vessel. This mass thus diluted loses its beautiful colour, but the tfin recovers its violet colour when the porcelain is bak'd. The tfin may be kept as long as they please. When they want to paint any porcelain vessel with this colour, they must dilute it with water, mixing a little common glue with it, which by some is thought unnecessary; but this must be determined by experience.

In order to gild or silverize the porcelain, they add two suen of cerufs to two mas of dissolved gold or silver leaf. The silver upon the varnish tse-kin has a beautiful splendor. If they gild some, and silverize others, they do not leave the silveris'd work so long as the gilt in the small furnace, otherwise the silver would disappear before the gold obtains the degree of baking necessary to give it its lustre.

There is another sort of coloured porcelain, which sells dearer than those painted with the colours we have mentioned. Perhaps the account I am to give of it may be of some use for perfecting the Dutch ware, tho' we cannot obtain the perfection of the Chinese porcelain.

To make these kinds of works, it is not necessary that the substance employed should be extremely

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y fine. They take cups which have been already bak'd in the large furnace, without being varnished, which are consequently all white, and have no lustre. They colour them by plunging them in the vessel where the colour is prepared, when they want them of the same colour. But if they want them of different colours, such as the works called hoan-tou-houan, which are divided into a kind of squares, some of which are yellow and others green, they apply these colours with a large pencil. This is all the ornament they give to this species of porcelain, only after the baking, they lay a little vermillion on certain places; as for example, on the beaks of certain birds; but this colour is not baked because the fire would destroy it, for which reason it does not last long. When they have applied the other colours they rebake the porcelain in the large furnace, with other porcelains which have not been bak'd before. It must be placed at the bottom of the furnace, and below the air-vent, where the fire has less activity; because an intense fire would destroy the colours,

The colours proper for this sort of porcelain are prepared in the following manner. In order to make the green they take tam-hoa-pien, saltpetre, and powder of flint. When they have reduced them separately into an impalpable powder, they dilute and mix them together with water.

The most common azure together with saltpetre, and powder of flint, forms the violet.

The yellow is prepared by adding three mas of the red of copperas to three ounces of the powder of flint, and three ounces of cerufs.

For producing the white, to four mas of the powder of flint they add a tael of cerufs. All these ingredients are to be diluted in water; and  
this

this is the whole of what relates to the colours of this sort of porcelain.

When speaking of the furnaces where they rebake the painted porcelain, we have observed, that they make piles of porcelain vessels, putting the smaller into the larger, and thus ranging them in the furnace. Care must be taken, that the vessels do not touch each other in the parts which have been painted; for in this case all the vessels would be lost. The foot of one cup may be supported by the bottom of another, tho' it be painted; because the edges of the bottom of the smaller cup are not painted; but the sides of one cup must not touch those of another. Thus, when they have cups which do not easily enter into each other, such as the long chocolate cups, the Chinese workmen range them in the following manner.

Upon a bed of these porcelains laid in the bottom of the furnace, they lay a covering either of plates made of the earth with which the furnaces are built, or of the pieces of cases for the porcelain; for in China every thing is used to the best advantage. Above this covering they lay another bed of these porcelains, and continue to do so to the very top of the furnace.

It is not true, as we have before observed, that they know that the painted or gilt porcelain is baked when they see the gold or colours sparkle with all their lustre. The colours are not distinguished, till the rebak'd porcelain is become cold. They judge that the porcelain baked in the small furnace is ready to be taken out, when looking thro' the aperture at the top, they to the very bottom see all the porcelains red with the fire, when they distinguish the pil'd cups from each other, when the porcelain has no longer those inequalities

ties formed by the colours ; and when the colour<sup>s</sup> are incorporated in the body of the porcelain, in the same manner that the varnish laid upon the beautiful azure, is incorporated with it by the heat of the large furnace.

As for the porcelain rebak'd in the large furnace, they judge that it is sufficiently bak'd, 1<sup>st</sup>, When the flame which comes out is not of a very red, but rather of a whitish colour. 2<sup>dly</sup>, When looking thro' one of the apertures, they perceive that the cases are all red. 3<sup>dly</sup>, When after having opened a case at the top, and taken a piece of porcelain out of it, they perceive when it is cold, that the varnish and colours are in the condition in which they want them. And 4<sup>thly</sup>, When looking in at the top of the furnace, they perceive the gravel in its bottom to be shining. By all these marks, a workman judges whether the porcelain is perfectly bak'd.

When they would have the blue intirely to cover the vessel, they use leao or azure prepared and diluted in water to a due consistence, and in this they plunge the vessel. As for the blown blue called tsui-tsim ; they in it use the most beautiful azure prepared in the manner before mentioned. They blow it upon the vessel, and when it is dry they lay on the ordinary varnish either alone, or mixed with tsoui-yeou, if they would have the porcelain veined.

Some workmen upon this azure, whether blown or otherwise, draw figures with the point of a long needle. The needle removes as many small grains of the dry azure as is necessary to represent the figure, after which they lay on the varnish. When the porcelain is bak'd, the figures appear painted in miniature.

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There is not so much labour as may be imagined, in making the porcelains on which flowers, dragons, and other similar figures are emboss'd. They first trace them with the graver on the body of the vessel; then they make small incisions round them, which raise them; and lastly they apply the varnish.

The following things are to be observed in the manner of preparing the leao, or azure. 1st, Before burying it in the gravel of the furnace, where it is to be toasted, it must be well wash'd, in order to remove the earth which adheres to it. 2dly, It must be included in a case of porcelain well luted. 3dly, When it is toasted it must be pounded, and pass'd thro' a sieve. Then they put it into a well-varnished vessel, and pour boiling water upon it. After having agitated it a little, they take off the froth on the surface, and pour out the water by inclining the vessel to one side. This preparation of azure with boiling water is to be repeated twice. After this they take the azure thus moist and reduced into a kind of thin paste, and putting it into a mortar, pound it for a considerable time.

The azure is found in the mines of rock-coal, or in the red earths adjacent to those mines. It sometimes appears on the surface of the ground, and this is an infallible sign, that by digging farther, more of it may be found. In the mine it presents itself in pieces as large as a man's thumb, but flat, and not round. The coarse azure is pretty common, but the fine is very rare, and not easily discerned by the eye; and we must make tryal of it before we can judge of its value. This tryal consists in painting a porcelain vessel with it, and then baking the vessel. If Europe produced beautiful leao or azure, and fine tfin, which is a kind of violet colour, these would among the Chinese, be

Commodities of great value, and easily transported, so that we might bring back the most beautiful porcelain in exchange for them. We have already observed that a pound of tſin is ſold for a tael and eight mas, that is, for ſeven ſhillings and ſix pence. For two taels they ſell a box of beautiful leao, which contains only ſix ounces, and this amounts to twenty pence an ounce.

They have try'd to paint ſome porcelain veſſels black with the fineſt of the Chineſe ink ; but this attempt had no ſucceſs ; for when the porcelain was baked it was found to be very white. As the parts of this black have not a ſufficient body, they were diſſipated by the action of the fire, or rather they had not force enough to penetrate the bed of varniſh, and produce a colour different from it.

## C H A P. XVIII.

*Description of rhubarb and ſeveral other aromatic and medicinal plants, their virtues and uſes ; the manner of preparing and uſing them ; the ſkill of the Chineſe phyſicians.*

THE moſt ſingular plant produced in China, is the hia-tſaa-tom-chom, which ſignifies that this plant is an herb during the ſummer, but in the beginning of winter becomes a worm. If the matter be duly conſidered, it will be found that this name has not been given to it without reaſon. Nothing better repreſents a worm three quarters of an inch long, and of a yellowiſh colour. We ſee the head, the body, the eyes, the feet on each ſide  
of

of the belly, and the foldings on the back distinctly formed. These things are best observed when the plant is recent ; for in time, especially when it is exposed to the air, it becomes blackish, and is soon corrupted, because its substance is soft. This plant passes in China for one of the exotic kind, and is very rare, since few are to be seen except at the palace. It also grows in the Thibet, and is found, tho' in a small quantity, on the frontiers of the province of Tse-tcheouen, which borders on the kingdom of Thibet.

The virtues of this plant nearly resemble those ascribed to the gen-seng, with this difference, that the frequent use of it does not produce hemorrhages, as the gen-seng does. It fortifies and restores parts weakened either by excess of labour, or long protracted diseases. It is used in the following manner.

They take five drams of it whole, with its tail, and with these they stuff the belly of a tame duck, which they roast before a slow fire, and when it is sufficiently roasted they take out the medicine, whose virtue has passed into the flesh of the duck ; of this duck the patient eats so much, morning and evening, for ten days ; but this remedy is not much used, except at court, on account of the great rarity of this precious medicine.

The *santsi* is more easily found, because it is a plant which grows without culture in the mountains of the provinces of Yunnan, Quoecheou, Setchouen. It sends out eight stalks which have no branches. The stalk in the middle is the longest and roundest. It bears three leaves, which are like those of mugwort, and are fixed to the stalk by pretty large tails. They are not rough, but shining, and of a deep green colour. The seven other stalks, which are only a foot and a half high, and whose

bodies are triangular, rise from the principal stalk, three on one side, and four on the other. These have each but one leaf at the superior extremity ; for which reason it is called *santfi*, which signifies three and seven, because the stalk in the middle has three leaves, and the seven others but seven among them.

All these stalks arise from a round root four inches in diameter. This root sends off several others which are oblong, as large as a man's little finger, and have a hard and rough bark, but their internal part is of a softer substance, and of a yellowish colour. These small roots are principally used in medicine. The stalk in the middle is the only one which bears white flowers, which grow at its point in form of grapes, and blow towards the end of the seventh month, that is, in the month of July.

When they intend to multiply this plant, they cut the large root into slices, which they put into the earth about the fifteenth day of the spring. A month after, it sends forth stalks ; and at the end of three years it is as large and high as ever it will be.

The Chinese use it in the following manner. About the summer solstice, they take the stalk and leaves, and beat them in a mortar, in order to press the juice from them, which they mix with common lime reduced to powder. Of these they form a mass, which when dried in the sun, they use for the cure of wounds. They use this same juice mix'd with wine, to cure spittings of blood. But this remedy has no virtue except in the summer, and to those who are on the spot ; for which reason, towards the end of autumn, they pull up the large roots, cut off the small oblong ones, and dry them in the air, in order to be transported in-

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to other provinces. The heaviest of these small roots, which are of a blackish grey colour, and grow in a dry soil on the coasts, are reckoned the best. Those which are light, of a yellowish colour, and grow on the edges of rivers, have little or no virtue. A dram of the powder of those roots cures hemorrhages and spittings of blood. If we were to make an analysis of it, we should perhaps find it possessed of other no less valuable qualities.

The tai-hoam, or the rhubarb, grows in several parts of China. The best is that of Sse-tchouen ; but that which grows in the province of Xensi, and the kingdom of Thibet, is far inferior to it. What grows elsewhere is of so little value, that it is not used. The stalk of the rhubarb is like the small bamboos, or Chinese canes. It is hollow and very brittle three or four feet high, and of a dark violet colour. In the second moon, that is, in the month of March, it sends forth long and thick leaves, which grow four and four on the same tail, looking towards each other, and forming a chalice. The flowers are of a yellow, and sometimes of a violet colour. In the fifth moon it produces a small black seed, as large as a millet. In the eighth moon they pull it up, and find the root large and long. That which is heaviest, and most marbled in the heart, is the best and most esteemed. This root is of such a nature, as renders it very difficult to be dried.

The Chinese, after having pulled up and clean'd the roots, cut them in pieces about two inches large, and dry them on plates of stone, under which they kindle fires. They turn these pieces till they are thoroughly dry. If they had



ovens like those in Europe, they would not make use of these plates. As this operation is not sufficient to draw out all the humidity, they make a hole in each piece, and suspend them in the greatest heat of the sun, till they are in a condition to be kept, without being corrupted.

As to the use of rhubarb, the Chinese are nearly of the same opinion with the Europeans. However they rarely use rhubarb crude and in substance; for they say it tears the bowels, and produces gripes; and as the Chinese generally love better not to be cured, than to be relieved by great pain, they more chearfully take rhubarb by way of decoction, with a great many other simples, which they combine according to the rules of their art; but if it is necessary to take it in substance, they prepare it in the following manner.

They take as many pieces of rhubarb as they have occasion for, and steep them twenty-four hours in rice wine (that of grapes would be better if they had any) till they are very soft, and can be cut into thin slices. Then they put upon a furnace a kind of kettle, whose mouth is two feet in diameter, and which diminishes gradually to the bottom in form of a cap. They fill this kettle with water, and cover it with an inverted sieve made of small slips of bark. Upon the bottom of the sieve they lay the pieces of rhubarb, covering the whole with a piece of wood, over which they throw a felt, that the steam of the water may not come out. Then they heat the furnace, and make the water boil, so that the steam raised thro' the sieve, penetrates the slices of rhubarb, and destroys their acrimony. At last this steam resolving, as in an alembic, falls down into the boiling kettle, and rends the water yellow, which the  
Chinese

Chinese keep for cutaneous disorders. These slices must remain at least eight hours in this circulation of the steam, after which they take them out, and dry them in the sun. They repeat this operation twice, and then the rhubarb is prepared, and is of a blackish colour. It may be pounded and formed into purgative pills. Five or six drams at least make a dose, which purges gently, and without gripes. The urine is that day more copious and red than usual, which, according to the Chinese, denotes, that an unnatural heat is dissipated in that way. They who have an aversion to so many pills, take the same quantity of the dried slices, and in an earthen or silver vessel, boil them in nine ounces of water to three, which they drink warm, but sometimes they mix simples with it.

This manner of preparing rhubarb produces the most salutary effects. An obstinate constipation had reduced a mandarin to the greatest extremity, and no remedies could procure him a stool; the patient vomited them up as soon as they were swallowed, as he also did rhubarb, whether taken in pills or decoction. A Chinese physician made him take a decoction of a double dose of this prepared rhubarb, with which he had mixed some virgin honey, by which means the patient had no nausea, and was freed from his disorder, without any pains or gripes.

Some European physicians say, that a dram of the powder of that part of the rhubarb where they string it, given in the morning fasting, in a glass of rose or plantain water, is an infallible remedy for fluxes. The Chinese physicians think quite otherwise; and say, that the rhubarb always begins to corrupt at that hole; that the powder found there is of no use; that it ought to be thrown away; and that only the internal part of the

the root, which is weighty and well marbled, ought to be us'd. It may happen, that in China they undervalue this part of the rhubarb, because it is there worth no more than four pence a pound; or because, being much dearer in Europe, the natives are unwilling to lose any of it.

There is a fourth root, which on account of its aromatic nature, seems to deserve our attention. The Chinese physicians who use it, do not know all its virtues, because they are unacquainted with the method of analysing it. They call it *tam-coue*. It is always moist, because it is oleous. Its virtue, they say, is to nourish the blood, and to promote and strengthen the circulation. It is an easy matter to have a large quantity of it at a small price. It may be transported without any fear of corruption, provided we use the same precautions with the Chinese, who from the province of *Sse-tchouen* transport to other provinces whole roots of it, which they keep in large store-houses. Out of these the petty merchants who keep shops furnish themselves. They cut this root, as well as others, in small slices, and sell it by retail; for which reason, if the European merchants want to purchase Chinese drugs at *Cantong*, they ought to take them from the store-house, and not from the shops where the roots are sold in small slices.

There is a fifth drug much esteemed and used in China, called *ngo-kiao*, which ought to be prepared in the following manner.

The province of *Cantong* has several metropolises, one of which is call'd *Yentcheoufou*, in whose district is a town of the third order, call'd *Ngo-hien*. Near this town is a natural well, or a hole in form of a well, near seventy feet deep, which, as the Chinese say, communicates with some subterraneous

terraneous lake or collection of water. The water drawn from it is extremely clear, and heavier than common water. If it is mix'd with turbid water, it renders it pure at once, by precipitating the foulness to the bottom of the vessel, just as alum does. The water of this well is us'd to make the the ngo-kiao, which is nothing but the glue made of the skin of a black ass.

They take the skin of this animal just kill'd, steep it five days successively in the water drawn from this well, after which they take it out to scrape and cleanse both sides of it. They afterwards cut it in small pieces, and boil it in the water of the same well, till the pieces are reduc'd to glue, which they pass hot thro' a cloth, in order to separate the coarser parts, which could not be melted. Then they dissipate the humidity of it, and every one gives it the form he pleases. The Chinese cast it into moulds, with characters, and put the seals or signs of their shops on it.

This well is of great importance in China, and is shut up, and seal'd with the governor's seal, till they make the glue for the emperor. This operation is generally begun after the autumnal harvest, and continued till the beginning of March. During this time, the neighbouring people bargain with the keepers of the well, and the workmen are employed in making the glue for the emperor. They make as great a quantity of it as they can, with this difference, that they prepare some of it coarser, and are at less pains to provide asses, which are sufficiently fat and black : however, all the glue made here is as much esteem'd at Peking as that sent by the mandarins of the place to the court and to their friends.

As this drug is in great repute, and as the quantity prepared at Ngo-hien is not sufficient for

for the whole empire, they prepare a spurious kind of it elsewhere, of the skins of mules, camels, or horses, and sometimes of old boots. They give it the same form and stamp as near as possible, and expose it with some of the genuine kind in the large and beautiful shops ; and as there are almost as many fools who buy, as villains who sell it, there is a great demand for it in the provinces.

It is, however, easy enough to distinguish the genuine from the spurious kind. The former has neither a bad smell nor disagreeable taste ; it is brittle and friable, and is only of two colours, either entirely black, or of a blackish red, like Peruvian balsam.

The spurious kind has a bad smell and taste, even when made of the skin of a hog, which approaches nearest to the true kind ; besides, it is not brittle, and is never very like the other.

The Chinese ascribe a great many virtues to this remedy, and affirm that it resolves inflammations, is friendly to the breast, facilitates the motion of the lungs, removes oppression of the spirits, and restores a free respiration to those afflicted with a shortness of breathing ; that it refreshes the blood, and keeps the intestines in a fit condition for performing their functions ; that it strengthens the foetus in the mother's belly, dissipates wind, expels heat, stops bloody fluxes, and provokes urine.

This medicine taken fasting, is good for diseases of the lungs, as experience has often evinced ; for patients who have us'd it, have found themselves surprisingly reliev'd : It is slow, and therefore ought to be long continued ; it is us'd, in decoctions with simples, and some times also in powder, but more rarely.

In China there are vast numbers of aromatic and medicinal plants ; but the best and most sought after, only grow in the provinces of Quamsi, Yunnan, Sse-tchouen, and Quou-tcheou.

On the mountains of the provinces of Tartary we find beautiful angelica, tho' not cultivated. We also see large tracks full of white dittany, parsnips, wild asparagus and fennel, celandine, cinquefoil, agrimony, pimpernel, penny-royal, and the greater and lesser plantains. In the small vallies between the mountains, there are fields of beautiful mugwort and wormwood, different from that of Europe. The fern is only seen upon the tops of the highest mountains, and there are no such things to be found there as kermes, gentian, master-wort, juniper or ash-wood.

The mountains of Tartary, for the most part, have trees only on one side, which is generally the south. This rule is not universal, but generally one or both sides are bare, and only cover'd with a few herbs, and some parched hay, without either flowers or shrubs. We may readily conjecture, that there are mines, and what confirms it is, that the labourers near Gehe often find gold in the bottoms of the torrents, which they carry to the emperor, who rewards them for their pains.

The trees on these mountains are small and low, ~~are~~ ill-nourish'd, and with few branches, ~~and trees,~~ elms, and nut-trees so close, that they form a thicket. They, however, abound in nuts, and draw the wild boars in troops for their food. Those trees are intermix'd with wild roses and thorns. We there find none of the wild fruits observable in most of the European mountains. The Mogul Tartars who inhabit these territories, cultivate no fruit trees, and are content with two kinds of wild fruit, which they have but in some parts of Tartary.

The

The first is in their language call'd oulana, which resembles a large red cherry. It grows on a small stalk three inches high, which springs up among the grass in the vallies, or on the sides of the mountains. The second grows in clusters, on a beautiful tree twenty five or twenty six feet high, and in size resembles small Corinthian grapes. When the first frost falls upon them, they become red, and are of a tartish, but very delicate taste.

In the Chinese gardens we find neither hyssop, nor sage, nor marjoram, nor borrag, nor fennel, nor thyme, nor cresses, nor basilicon, nor lavender in the plains, nor lilly of the valley in the forests. Neither do we there find tulips, nor jonquils, nor tuberoses. In the spring the fields are full of violets, which however have neither taste nor smell; but in recompence, the Chinese have so many plants, roots, trees and flowers, not found in Europe, that they may be very well satisfied with the want of those which they have not.

## C H A P. XIX.

*Regulations observ'd in examining the Chinese graduates and mandarins; the particular manner in which they are punish'd or reward'd; the formalities observ'd in criminal affairs.*

**I**T is the custom in China for the court to send every three years an examiner into each province. His business is carefully to examine the compositions which every graduate is oblig'd to present him with. He punishes those whose composition

position is indifferent, and breaks those intirely whose composition is extremely bad.

Every graduate who does not appear at this triennial examination, is from that time depriv'd of his title, and plac'd in the rank of the people. There are only two cases in which the law excuses him ; namely, when he is sick, and when he is in mourning for his father or his mother. The old graduates, after having in their last examination given proofs of their skill and age, are ever after freed from these examinations ; but retain the habit, the bonnet, and the prerogatives of honour, annexed to the state of a graduate.

The examination of the mandarins who govern the people, is much more severe than that of the graduates. They examine whether they are infirm, whether they are severe in their chastisements, whether they are too indulgent, or negligent in executing business ; whether they are so attached to their duty, as punctually to obey the commands of the superior mandarins ; whether they exact money unjustly of the people ; and lastly, whether they have extraordinary or indifferent talents for governing. This examination is call'd the last or general examination. During this examination, the viceroy, and general mandarins of the province, neither pay nor receive visits till the catalogue and notes they have made on the subaltern officers are sent to the court. On this occasion there are several mandarins propos'd and recommended as excellent officers of great merit, with whom no fault can be found.

Upon the testimony and informations of the viceroy, the emperor gives orders to bring these excellent officers to court, where they are examin'd a second time. Since they are taken from such a province, and propos'd by the viceroy, he ought  
to



to know them, and answer for their extraordinary talents. In this choice he is not permitted to act by interest or friendship, nor to follow his particular views and inclinations. However, if the emperor does not find them such as they had been represented, or if it should be afterwards found, that such an officer behav'd ill in his government, or had not been at the pains to exact the tribute for some years; or that such another officer, after being rais'd to a more considerable post, has committed crimes in his preceding charge, the viceroy is always judg'd culpable; for he either knew the faults of his subaltern, or he was ignorant of them. If he knew them, why did he not accuse him, instead of proposing him as a man of rare merit. If he did not know them, he is looked upon as a weak man, without either vigilance or penetration. If the subalterns do not dread him, and can only deceive him, he is judg'd unworthy of so high a rank.

For this reason the emperor ordered, that they should more clearly determine and explain the punishment due to these viceroys, when they should be found faulty in this respect. The first of the six sovereign tribunals, whose business it is to transact all the affairs relating to the mandarins of the empire, assembled, and made the following regulations.

First, That the viceroys should be strictly obliged to watch over the conduct of their subaltern officers, to make it their business to know them, and to be careful in choosing and distinguishing those whom they propose as excellent. Secondly, That if in their choice they suffer'd themselves to be influenced either by avarice, recommendations, or other selfish views, they shall be broke, and declar'd incapable of ever bearing another office.

Thirdly,

Thirdly, That if after the examination of these officers at court, they should be found to have little merit, or to have committed faults during their mandarinship, the viceroy who propos'd them should be broke. Fourthly, That if before any thing is discover'd, notice should be given by the viceroy himself, of any fault he found out after he propos'd them, this notice should be attended to, and he should not be punish'd. Fifthly, That if these excellent officers being rais'd to a superior mandarinship, should behave ill, it should a second time be examin'd how they had behav'd in the preceding mandarinship; and if it be found that they have before committed the like faults, the viceroy should be degraded to a mandarinship of the third order. Sixthly, That if after examining and finding that the officer behaved well in his preceding charge, but became corrupted when he was rais'd to a superior mandarinship, the viceroy should not be molested, but judg'd to have fulfill'd his duty.

To these regulations of the sovereign tribunal, the emperor added his own. He declar'd, first, That the subaltern officers who should be found greedy extorters of money from the people, or too severe in their chastisements, should be forthwith depriv'd of their charges, without any hopes of ever being re-established. Secondly, That all the other officers whom the sovereign tribunal, according to the notes of the viceroy, shall have broke or degraded for any reason, for example, because they were negligent in terminating affairs, or too weak and cowardly in the manner of their government, should be by the emperor permitted to come to court to justify themselves, if they thought the information unjust; that the sovereign tribunal should hear their reasons, and that his

his majesty himself would grant them a hearing. Thirdly, That for the execution of such orders, those who come to justify themselves before they leave the province where they have been mandarins, should obtain a pass from the viceroy, certifying that such an officer has been broke or degraded for such a fault, and that because he wants to make remonstrances to the court, this attestation is granted him. Fourthly, That the viceroy being ask'd by the said officer, cannot refuse him this attestation; or if fearing lest his error or injustice should be discover'd, he should refuse it, the said officer shall return into the province where he was born, that he shall declare to the viceroy of that province, that having been broke or degraded in such a province, the viceroy has refus'd him a patent to go to court, to represent the reasons which justify him, and he shall demand one of the said viceroy, which cannot be refus'd to him. Fifthly, That if after having examin'd the reasons of the said officer, and the responses of the viceroy, it shall be found that he has been unjustly broke or degraded, he shall be re-establish'd into a charge of the same degree with that which he had before; but if, on the contrary, it shall be found that he is culpable, and imposes on the viceroy, by accusing him of injustice, to the loss of his charge, they add a corporal punishment, according to the baseness of his crime. Sixthly, That if the viceroy is convicted of injustice or error, he shall be either broke, or degraded to an inferior employment.

For understanding the third and fourth article, it is necessary to apprise the reader, that without a special order of the emperor, which is rarely granted, a man cannot be a mandarin of the people in his own province, nor even in the confines

of a contiguous one. The mandarinship granted to an officer to govern the people, must be at least fifty leagues distant from the skirts of his own province, that the solicitations of relations and friends may not disturb him in the discharge of his office, nor hinder him from executing justice in his sentences.

The superior mandarins of each province have orders to distinguish all the mandarins of their several districts into three classes. The first consists of those who have polite and engaging manners, who do not want to become rich, who are men of learning, and acquainted with the laws and customs of the empire, who are young, and full of strength and health: The second contains those who are possessed of the same talents, but who have either an infirm state of health, or are advanced in years: The third consists of those who, tho' sound and robust, have yet but indifferent talents.

Nothing is more remarkable, nor better calculated for good government, than the means us'd in China, to prevent the emulation between the inferior and superior mandarins. For those who discharge their duties well, there are honourable distinctions, allotted as the rewards of their diligence. These marks are in the Chinese language call'd *ki-lo*, that is, to be mark'd upon the catalogue, or to have a good mark. These marks are given to the first mandarins by the sovereign courts of Peking, and to the subaltern mandarins by the governors and viceroys, who are oblig'd to acquaint the sovereign courts with it, that they may confirm the marks granted. These distinctions were instituted as a recompence to those, who in the discharge of their office have done some action which deserves a small reward; for example, if they have justly

determin'd a difficult and embarrass'd cause ; if they have exactly collected the king's taxes ; if they have with equity and fidelity executed the commands of the superior mandarin. These marks are both honourable and useful to them ; honourable, because they are specified in all the public writs, in all the orders or advertisements which they publish to the people ; for example, I —, first mandarin of such a town, honour'd with six (or twelve) marks of my diligence, by order of the viceroy, my superior, acquaint the nobility, the literati, and the people, that, &c. They are useful to them, because, if they have committed some slight fault, instead of depriving them of their office, the governors only erase from the catalogue one or more of these honourable marks.

But as there are honourable marks to recompense such actions as deserve a slight reward ; so there are marks of laziness and negligence to punish those who are guilty of slight faults. These consist in depriving the mandarin of a small part of the salary he receives from the emperor ; for example, if a mandarin has committed a slight fault, if he has marks of diligence, they are effac'd ; if he has none, they deprive him of one, two, or more months salary, which goes to the emperor. If a viceroy, or any great mandarin, has presented a memorial concerning any affair, if he is mistaken in a letter, if he has omitted some words, if he has us'd an improper or obscure expression, or if what he says is not clearly understood, the emperor remits the memorial to a tribunal, which judges of these negligences. This tribunal examines, judges, and presents its sentence to the emperor, which generally consists, according to the law, in depriving this viceroy of three, and sometimes six weeks salary. The emperor either  
absolutely

absolutely subscribes the judgment in these terms, I approve of this determination, or he says, I for this time grant, that he shall not be depriv'd of his salary, but let his memorial be sent back to him to render him more attentive for the future.

Six months after a robbery has been committed in any part of a province, the viceroy enquires whether the robber is taken ; if he is not, he informs the court, that on such a night one robber, or more, enter'd into the house of such a merchant ; that such of the mandarins of the people, and such of the mandarins of war, are specially oblig'd by their charge to hinder robberies, and to search for robbers ; that for six months the robber has not been taken, and that these mandarins ought therefore, according to the law, to be depriv'd of six months salary. The sovereign court examines this representation, and makes a report of it to the emperor, who subscribes it : At Canto, for instance, a place four hundred leagues from court, if a prisoner breaks the prison, and saves himself, this fact is communicated to the emperor, as well as the affairs of the first consequence, and the mandarin who has the charge of the prisoners, is depriv'd of some months salary, and has orders to seek for the prisoner till he find him : if, however, it can be prov'd, that there has been collusion, he will be broke, and subjected to a corporal punishment. If a prisoner dies of any disease in the prison, before the officer calls the physician to give him remedies, the court being apprised of it, deprives him of three months salary, and often the first governor of the town is depriv'd of three months salary. It is the fault of the superior, say they ; if he went often, according to his duty, to visit the prisons, the subaltern officers would not be so negligent, nor so

cruel to sick prisoners. But if these officers had some marks of diligence, the court, after having agreed, that, according to the law, such a mandarin ought to be depriv'd of six weeks salary, yet because he had formerly obtain'd such a number of marks of diligence, only they efface two or three of these honourable points. By this explication, the reader sufficiently sees the use of these marks. Let us now consider the manner in which they rise to a more honourable charge.

There is another method in the Chinese government, of recompensing or punishing the great and small mandarins, without either shedding blood or spending money. To have the right of being elevated to a more honourable rank, is call'd in Chinese *kia-kie*, that is, to add one degree; and to deserve to be degraded to an inferior degree is call'd *kiang-kie*, to be degraded one degree. We must conceive of this addition of one, two, or three degrees, as we do of the marks of diligence. The use of them is the same, and they only differ in point of their being greater and smaller; for if the degrees added are much more esteem'd than these marks of diligence, four of such marks are only equivalent to one of these degrees, for which reason they are only bestow'd on actions which deserve them; for example, if in a time of famine a viceroy takes care, by his vigilance and good conduct, to obtain rice from the other provinces, and supply the wants of the people; if a mandarin purchases rice at his own expence for a considerable sum; if he has so well repair'd the moles, that notwithstanding the violence of the waters, there shall be no inundation; one of the sovereign courts being inform'd of these services, assembles, deliberates, and grants him two or three of these degrees. They are dignified

nified with this honour in all the edicts and advertisements, which they intimate to the public. I ———, first governor of this city, honour'd with three degrees, intimate, that, &c. If they are afterwards elevated to a more illustrious mandarinship, these degrees follow them; or if they have fallen into some fault, the sovereign court, which judges of these matters, examines the fact, and declares, that for such a fact, according to law, they ought to be degraded to an inferior charge, but that since, by their past merits, they have obtain'd three degrees, they will efface two of them. If, however, the fault is great, they break them absolutely, without any regard to the degrees they had acquir'd. All these deliberations and judgments are presented to the emperor, who with his own hand confirms them, or pardons the guilty, as he pleases. The sovereign court ought always to be conformable to the law, without having regard to the friendship, the past services, the quality or the rank of the criminal; but if he is a great mandarin, for example, a viceroy, who has been long serviceable, or who has uncommon abilities, the emperor, to shew that he does not forget his past services, or that he may not lose a man of so much merit, conforms himself to the law, breaks him from his charge, but, without appointing him a successor, leaves him in the exercise of it. He is no longer thought to have the charge, and yet he performs all the functions of it, as if he held it for a time in the absence of another. By this means they furnish the criminal with the means of repairing his past fault. This is a method left to him of returning into favour, without suddenly depriving the public of an excellent officer; for if he commits a second fault, he is irretrievably lost, whereas if he discharges his duty with equity



and exactness, the emperor, after one or two years, and sometimes after six months, restores him to the charge of which he has been depriv'd.

By the explication of the degree added, it is easy to understand what it is to be degraded a degree. It is not always to be translated to an inferior charge, but to have merited to be so. Sometimes the change is not made on the spot, and a governor of a town of the second order is sent to a town of the third order. One may, by different faults, deserve to be degraded three or four times, or for one fault be degraded three or four degrees, without being depriv'd of his office. These kinds of degradings are also, to the scandal of the mandarin, inserted in all the writs which he publishes. I ———, first governor of such a town, who have deserv'd to be thrice degraded, &c. If by any distinguish'd action, he has merited the addition of two or three honourable degrees, they retrench a number of the disgraceful degrees, and the sovereign courts deliberate and judge of these matters upon the report of the superior mandarins; but not finally; for all deliberations and judgments are presented to the emperor, who, with his own hand, confirms, changes, or even rejects the determination, and orders the tribunal to assemble and deliberate a second time: For this reason the first presidents of the sovereign courts, and the counsellors, are very attentive to what they examine, and to the judgment they pass on each affair; for they are sure that their judgment will be read by his majesty, who often reprehends, punishes, and sometimes breaks them, as officers ignorant of the laws, and incapable of discharging their duty.

The Chinese government is no less admirable in the forms observed in all criminal affairs. It is first to be observed, that except in some extraordinary cases, which are specified in the body of the Chinese laws, no mandarin nor superior tribunal can definitively pronounce a sentence of death. All judgments in crimes worthy of death must be examined, decided, and subscribed by the emperor. The mandarins send an account of the process to the court, pointing out the article of the law, which has determined them to pronounce in such a manner. For example, such a man is guilty of such a crime ; the law says, that those convicted of it shall be strangled ; I therefore condemn such a man to be hanged. These informations being come to court, the superior tribunal of criminal affairs examines the fact, the circumstances and the decisions. If the fact is not clearly laid down, or if the tribunal requires new informations, it presents a memorial to the emperor, containing the account of the crime, and the decision of the inferior mandarin ; and adds, “ In order to judge  
“ rightly, it is necessary to be farther acquainted  
“ with such a circumstance. Thus we think it ex-  
“ pedient to remit the affair to such a mandarin,  
“ that he may give us the informations we want.

The emperor orders what he pleases, but his clemency always induces him to remit the affair, that when a man's life is at stake they may not decide rashly, and without the most convincing proofs. When the superior tribunal has received the informations wanted, they again present their deliberation to the emperor, who either subscribes it, or mitigates the rigour of the chastisement, and sometimes even sends back the memorial, writing these words with his own hand, “ Let the  
“ tribunal deliberate once more on this affair, and

“ make their report to me.” We may say, that the Chinese government uses a scrupulous attention, when a man is to be condemn’d to death. This is the state of justice in China.

## C H A P. XX.

*The manner of travelling in the plains of Buenos-ayres, and Tucuman ; the multitude of flocks found there ; the manner of catching the game ; the order observed in the secular administration ; the herb paraguay much esteemed ; the revenue it produces to the Indians.*

THOSE who take long journies in the vast plains of Buenos-ayres, and in the desarts of Paraguay, generally use carriages. Of these they take three or four, more or less, according to their baggage, and the number of their servants. These carriages are covered with the skins of oxen, and that of the master is the most beautiful, since there is in it a chamber, which contains a bed and a table. The other carriages are destined for the servants and provisions, and each carriage is drawn by large oxen, the prodigious number of which in that country is the reason why they do not spare them.

Tho’ these carriages are heavy, yet they go ten or twelve leagues a day. They take with them scarce any other provision than bread, biscuit, wine, and salted meat ; as for fresh victuals, they never want them on the road. There are thirty, forty, or fifty thousand oxen and cows wandering up and down in these immense plains. It is unlucky

lucky for a traveller to get into the midst of them, since it is often three or four days before he can disengage himself.

The ships which come from Spain to Buenos-ayres, take in hides for their cargo. On this occasion, the grand mantanea, as the Spaniards call it, is made. They kill a hundred thousand oxen, or perhaps more, according to the burthen and number of the ships. It is surprizing, that if a few days after we go into the parts where this great slaughter has been made, we only find the bones of these animals. The wild dogs, and a kind of ravens different from those of Europe, destroy them so soon, otherwise they would infect the air of the country.

If a traveller wants game, he can easily obtain it with a stick, to which he has tied a string with a loop or nooze. He may, without going out of his carriage, or stopping on his journey, catch as many partridges as he pleases. They do not fly away when the carriages pass by them, and they think themselves safe when they are hid under the grass; but they are far from having such a good taste as those of Europe. They are dry, have but little taste, and are almost as small as quails.

The vast extent of these forests is sometimes interrupted by tracks of barren and sandy grounds, which require two or three days to travel over them. When travellers are obliged to pass these tracks, the heat of the sun, thirst and weariness, make them regret the want of the woods out of which they came, and the woods into which they enter again soon make them forget the sandy plains. Sometimes, in the midst of these desert woods they find the most delicious spots, since all that the art and industry of man can invent to render a place

place agreeable, comes not near the beauties which simple nature produces in them.

But it is dangerous to travel in this vast extent of country. The Guaycarus are greatly to be dreaded, who continually scour the fields, and have several times attempted to surprize the town of Santafe. They never give any quarter, and those who fall into their hands have their heads forthwith cut off. They tear off the skin and hair, and erect these as so many trophies. They go intirely naked, and paint their whole bodies, except their face, with different colours. They adorn their heads with a cap of feathers. Their arms are bows and arrows, a spear and a dart, which is four or five ells long, and sharp at both ends. They throw it with so much force, that they strike it thro' a man's body. They fix this dart to their wrist, that they may pull it out after they have thrown it.

These barbarians are not naturally brave, and only attack their enemies by laying snares for them; but before they engage, they make terrible howlings, which so frighten those who are unaccustomed to them, that the most courageous are intimidated, and remain defenceless. They are extremely afraid of fire-arms; and as soon as they see one of their men fall, they all take flight. But it is not easy even for the most dexterous marksman to hit them, because, when on horseback, they do not remain one moment in the same posture. They lie sometimes flat, and at others are on the side, or under the belly of the horse, whose bridle they fix to their great toe, while with a whip, consisting of four or five thongs of leather, they make the dullest horse run. When they see themselves closely pursued, they abandon their horse and arms, and either throw themselves into the  
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river, where they swim like fish, or betake themselves to thick forests, from which they rarely or never venture far. In process of time their skin is so hardened, that they become insensible to the pricking of briars and thorns, thro' which they run without any concern.

These barbarians made frequent incursions into the villages of Paraguai; but they have been so often repulsed and defeated, that they dare not now shew themselves. The form of government in these villages is so singular, that it ought carefully to be related.

The Indians of that country have a peculiar genius for the mechanick arts; so that there are a great many trades in which they excel. They make all the cloths and stuffs for which they have occasion. In summer they are cloathed with cotton, and in winter with woollen garments. As this manufacture is very considerable, when the inhabitants are sufficiently provided, they send the surplus to Buenos-ayres, Corduba, and Tucuman. The money arising from these commodities serves to buy several things which come from Europe, and are not to be found among them. They also traffic considerably in a certain herb which grows in Paraguai, and which is much used in Chili and Peru, just as the Chinese tea is in Europe.

It is to be observed, that it is only on the mountains of Maracayu, near two hundred leagues from the villages of Paraguai, that the trees which produce this so much esteem'd fruit grow naturally. The Indians of Paraguai stand in absolute need of it, both for their drink, and an exchange for aliments and other commodities. It was formerly necessary for them to spend several months of the year in travelling to these mountains. By this means the villages were often exposed to the incursions

sions of their enemies. Of several thousands who set out, a great many never returned, because a change of the climate, and the vast fatigues of the journey, destroyed incredible numbers. Others, wearied with the toil, fled into the mountains, and were never afterwards seen. In order to remedy these inconveniencies, they brought young trees from Maracayu, and planted them near the villages. These plants succeeded very well; and of the seeds, which resemble those of ivy, they formed nurseries; but the fruit produced by these cultivated trees has neither the same strength nor virtue with that which grows on those that are wild. The king of Spain has allowed the Indians of the villages of Paraguai every year to bring to the town of St. Foi, or to the Trinity of Buenos-ayres, twelve thousand arobes (an arobe weighs twenty-five pounds) of the fruit of the Paraguai, but they can hardly bring above six thousand. Besides, what they bring is not the finest sort, called caamini, which is very rare, but that called pabos, which is the most common. The current price of this commodity at St. Foi, Buenos-ayres, and the royal receipt where the tributes are collected, is four piasters for each arobe; so that what the Indians bring every year amounts to about one thousand pounds. The money or commodities got for this piece of merchandize, are equally divided among the inhabitants of each village.

Their houses are only one story high; and tho' they are strong, yet they have none of the ornaments of architecture, because the inhabitants in building them have no other view than to defend themselves from the injuries of the air. Their church is large, magnificent, and extremely rich. All the inhabitants are supplied with provisions in the following manner.

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Those who reap are obliged to lodge all the grain in public magazines taken care of by persons who keep a register of all that they receive. In the beginning of each month, the officers who have the care of the grain, deliver to the chiefs of the quarter, the quantity necessary for all the families of their districts; and these chiefs forthwith distribute more or less, according to the greater or smaller number of each family.

The same custom is observed in the distribution of flesh. Every day a certain number of oxen and sheep are put into the hands of persons appointed to kill them; who, after the animals are killed, inform the chiefs of the quarter, who take what is necessary, and give each family a quantity proportioned to their number.

In consequence of this regulation, they have no poor nor beggars; but all enjoy an equal abundance of the things necessary to life. There are in each town several large houses for the sick, some for the men, and others for the women. In these different houses there are persons appointed to take care of the sick, and to see that they want nothing which may be necessary for them.



## C H A P. XXI.

*The extreme misery of the Indians of Madura. The means they have of enriching themselves ; their avarice ; their delicacy with respect to the precedence of their tribes ; their employments and government ; the occupations of their women ; the fruits, herbs, and animals of the country.*

**A**T Madura we find, as in other places, some people who are poor, and others who are rich. The number of the former is very great, and many of them are sometimes obliged to sell their children, and even themselves, for subsistence. Some of them labour the whole day like galley-slaves, and hardly earn what is just sufficient to support themselves and their families. There are multitudes of widows, who have nothing to supply their wants, besides a kind of spinning wheel. Such is the extreme indigence of many others, both men and women, who have nothing to cover their nakedness, except a small piece of stuff all in rags, and who have not so much as a mat to lie upon. The houses of the country people in Europe are palaces, in comparison of the miserable hovels in which these Indians lodge. Three or four earthen pots make up all the furniture of their cottages.

There are, however, rich men in the Indies. Agriculture, commerce, and employments, are there the ordinary means of becoming rich ; but the poor have a great deal of difficulty to preserve them-

themselves from oppression. Fraud and usury prevail in commerce ; and the exercise of the public offices is a true robbery. Theft is another and shorter means of becoming rich. It is very common in the Indies, and there is perhaps no country in the world where petty robbers are more detested, and where great ones are better screened from punishment. Among the Indians, there is a whole tribe who do not blush at the name of robbers, and publicly profess to be highwaymen. The labourers must be very careful, especially in the night, lest their cows and oxen should be carried off. But notwithstanding all their care and circumspection, their losses of this kind are very frequent. They thought to prevent these nocturnal robberies, by establishing guards in each village, who are supported and paid by the labourers ; but the remedy is become worse than the disease, since these guards are themselves the worst of all robbers.

The kings and great lords, by their oppression, amass great riches ; but the common use they make of their treasures, is to bury them under ground, otherwise gold would be very common in the Indies. It is said, that those who thus bury their riches, sacrifice human victims to demons, that they may take the charge of them, and not permit them to fall into other hands than their own. Many, however, search for these treasures, and that they may discover them, make other sacrifices of children and pregnant women to the demons.

Generally speaking, it is a crime at Madura to be rich. There is no accusation more willingly heard, and no fault more severely punished. They forthwith put the accus'd person on the rack, to force him, by the violence of the torments, to discover

cover where he has hid his money. Hence it happens, that the rich conceal their substance carefully, and are neither better cloathed, nor lodged, nor fed, than the most indigent. Hence it also happens, that tho' there are vast numbers of really poor people, there are also a great many others who affect to appear such, when they are very rich.

If, on the one hand, they in the Indies affect to be poor in the midst of riches, they are, on the other, very jealous of distinctions, and of the rank which their birth gives them. There is hardly any nation which has so much delicacy with respect to these kinds of prerogatives.

The Indians are divided into several classes of persons of the same rank and birth, and who have their particular usages, customs, and laws. There are three principal classes, that of the bramins, which is that of the first nobility; that of the kchatrys or rajas, which corresponds to what in England we call gentry; and that of the choutres, which signifies the common people. Besides these three tribes or classes, which are of great extent, there is a fourth called the class of the parjas, which is composed of the vilest and basest of the people. It is by all others looked upon as an infamous tribe, with which they cannot have any commerce, without losing their honour. The horror they have at a praja goes so far, that every thing he touches is thought defiled, and unfit to be used. They only speak to them at a great distance, and do not permit them to dwell in the towns, from which they must remove, and build their habitations at the distance prescribed to them.

Each of these principal classes is divided into others, some of which are more noble than the rest.

rest. The class of the choutres contains most of the subordinate classes, such as that of the merchants, that of the labourers, the silver-smiths, the carpenters, the masons, the painters, the weavers, &c. Every trade is included in the same class, and only those of that class can be employed in it.

Thus a carpenter would be severely punish'd for working at the business of the silver-smith. There are, however, certain professions, to which every one belonging to any of the classes of the choutres may apply himself, such as those of the soldier, the merchant, and the labourer: but there are other occupations which greatly vilify those who follow them. For example, in several parts of the Indies they place in the rank of the prajas, fishers, shepherds, shoemakers, and generally all those who work in leather.

The second thing to be observed, is, that an Indian cannot, without being degraded, eat with a person of a class inferior to his own, nor even eat the aliments prepared by a person of that class. Thus it must be a bramin, and not a choutre, who dresses the victuals of another bramin. The same holds true with respect to marriage, which no one can contract out of his own class. He who should contract an alliance with an inferior class, would be dishonoured for ever, looked upon as infamous, and totally expelled from his class. When the Portuguese first came into the Indies, they made no distinction of classes, and mixed themselves indifferently with the prajas, some of whom they even took into their service. From that time, the contempt which the Indians had for the prajas passed also to the Europeans, and has continued ever since.

It is to be observed, that tho' honour and riches may be acquir'd by great actions, yet nobility cannot be attained in the same manner, but is the pure gift of birth. The king can neither bestow it, nor private persons purchase it. The king has no power over the classes, nor can he himself pass to a superior one.

The men have various employments ; some serve the prince, others cultivate the land, some apply to commerce, and others labour at the mechanic arts. In the Indies, there are neither tax-gatherers nor lawyers. The intendants or governors are charged with the administration of justice, the raising of the taxes, and the military government.

Justice is dispensed without any noise or tumult, and most causes, especially those of small consequence, are determined in the town. Every one pleads his own cause, and the principal men are the judges. They do not often appeal from their sentence, especially if these judges are, as it generally happens, the leading men of the class. When they have recourse to the governor, the process is terminated almost in the same manner, except that he generally fines both parties ; for he knows the means of finding both guilty. Presents often cast the balance on one side, but it becomes equal when the judge is bribed by both parties.

As for the military government, the governors from time to time raise soldiers according to the exigence of the state. The king sometimes sends detachments into the provinces ; but this is generally to subdue some of the rebellious lords who refuse to pay the tribute, or to chastise those who have committed some terrible piece of injustice. They besiege their fortresses, on which occasion  
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the cannon play, but very weakly, and there is very little bloodshed on either side. Provided the person in fault has money, and is willing to make a reasonable composition, they give him good quarter, and he is permitted to defend himself by new taxes which he lays on the poor. These lords are, as it were, petty sovereigns, who govern their territories absolutely, and whose whole dependance consists in the tribute which they pay to the king. They are hereditary, whereas the governors and intendants are displaced at the pleasure of the prince. Some governors continue only four days, and yet become rich in that time, if they are cunning. These governors are often put to the rack, in order to make them give up what they have acquired, after which they are re-established in their charges, whatever oppressions they may have been guilty of.

Criminal law is not exercised with a great deal of severity. If we have said that a man was always criminal when he was rich, we may in like manner say, that as soon as he is rich he is innocent. The raising of the public taxes is the office of the intendants, who, as the subsidy is real, make an estimate of the lands, and tax them as they please. But they generally find so many expedients to cheat the labourer, and pillage him, sometimes under one pretext, and sometimes under another, that he often reaps no benefit from his toil, and the harvest on which he grounded his hopes, passes into the hands of others.

As for the women, they are less the companions than the slaves of their husbands. It is customary for the husband to speak contemptibly to his wife, and for her to speak to him, and of him, with the greatest respect. A wife must never pronounce the name of her husband, but must use periphrases

and circumlocutions to express her respect. It is no surprising thing to see them beat their wives, and abuse them in the most terrible manner. If they commit faults, say they, why should not they be corrected for them. The wife is never admitted to the table of the husband, but serves him like a slave, and the children, as if she was their servant. Hence it happens, that the children are gradually accustomed to look upon her as such, to treat her with contempt, and even sometimes to strike her. The step-mother is a rigid mistress, always lays the burden of the household labour on the step-daughter, and continually gives her orders in a harsh and imperious manner. Very often, however, the wives reduce their husbands to good behaviour, by making an elopement to their friends, who take their part; and on these occasions reproaches and imprecations are not spared. The wife does not return till the husband, or some of his relations, come for her; and she sometimes obliges them to a great many useless journeys. When she consents to return, they give a sumptuous feast to the husband, and reconcile him to his wife, who follows him home.

The women employ themselves in domestic affairs, in gathering wood, pounding rice, making oil, and other things of that nature. The oil is made of a shrub, by some European botanists called *palma christi*. They boil the fruit gently, and expose it two or three days to the sun. Then they pound it and reduce it to paste, which they dilute in water, pouring two measures of water on two measures of the pounded fruit, after which they boil the whole. When the oil swims on the surface, they take it off with a spoon, or by inclining the vessel to one side. Then they wash the sediment in water, and draw a little more oil from it.

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The manner of pounding the rice is very singular. The rice grows with a hard rough skin like barley, and in this condition it is called nellon. They boil it gently in water, dry it in the sun, and pound it several times. By the first pounding it is freed from its coarse skin, and by the second from the red pellicule below it, so that it appears more or less white according to the species of the nellon, of which there are more than forty sorts. When it is thus pounded, it is called arisi. Two measures of good nellon yield one of arisi. It is not mealy and broken like that of Europe. It does not swell in boiling, neither can it be kept long.

If the women have any leisure time, they employ it in spinning; for they never work at the needle, and do not so much as know how to handle it. There are some tribes in which the women are not permitted to spin, others in which they are only employed in making baskets and mats, and these cannot pound the rice, and others in which they cannot go for water, which is the business of a slave, or of the husband. In general, it is not customary for the women to learn to read and write; they leave the charge of this to the slaves of the pagods, that they may sing the praises of the demons.

The following are the aliments of the Indians. Water is their common drink, not because they want intoxicating liquors, but because these are only used by the dregs of the people, and are abhor'd by the better sort. The principal of these liquors, is that which flows from the branches of the palm-tree into a vessel fixed to receive their juice. With a certain bark and the powder of the palm-tree, they make a brandy which burns like that of Europe. Others ferment certain grains, and from them obtain a wine which intoxicates.



Rice is the most common food, and those who can afford it, boil it with flesh, fish, or pot-herbs. Sometimes they eat it with herbs, boil'd like spinach, or with a kind of small beans which their country produces. They also eat it with milk, and the vulgar and poor eat it with boiled herbs, whey, or simply with a little salt.

They have not rice in every part of the country, since in some they have only millet. They have very beautiful wheat on some of the mountains, but very few except the Turks and Europeans use it. The Turks form it into thin cakes, and the Europeans make bread of it, and biscuits like those used by sailors.

In the Indies there are almost no European fruits except some oranges and lemons, which they do not allow to ripen. They gather them and preserve them in some strong pickle, in order to prevent their spoiling, and eat them with rice.

The most ordinary fruit is the banana, or Indian fig. There are also mangos, especially towards the mountains. Their kitchen gardens produce gourds of various kinds, cucumbers, and other herbs peculiar to the climate. They have no sorrel, the want of which is made up by tamarinds. They have onions; but cabbage, turnips, and lettuce, are foreign plants, tho' they grow very well when they sow them.

As to the animals, there are in the mountains elephants, tygers, wolves, apes, stags, boars, hares, and rabbits. They leave the game pretty much at rest, tho' hunting is permitted to every body. The lords sometimes go a hunting or fowling for their diversion, but they do not pursue these amusements with keenness.

Some princes have domestic elephants and horses. The horses produced in the country are small and weak.

weak. Those used in the army are brought from other countries, and are very dear. Incredible pains is requisite to preserve them; since every day it is necessary to give them some drug or other. Before they dress them, and when they make the least stop on the road, they must rub them down, in order to strengthen their flesh and nerves. If this care is not taken, their nerves are shriveled up, and they in a short time become good for nothing. Instead of oats they give them a kind of lentils which they boil.

The oxen are of great use in the Indies, and a man's riches are judged of by the number of his oxen. They are used for tilling the ground, and for drawing carriages. Most of them have a large bunch on their necks. When they yoke them in the carriages, they put a cord about their necks, to this cord they fix a pole cross the breasts of the two oxen, and to this pole the beam of the carriage is fixed.

Their ploughs have no wheels, and the iron which serves instead of a coulter, is so narrow, that it only scratches the place where they sow the millet. The rice requires much more toil and culture. The fields where it is sown are always on the edges of ponds, made on purpose to keep the rain water, with which they moisten the ground in times of drought.

They have a great many chariots which are genteelly enough made. The wheels are very small, and made of large planks joined to each other. They have no other nave than a hole in the middle of these planks. The body of the chariot is very high, and adorned with carving, sculpture, and all sorts of figures. These chariots are of no use, but to contain the idols which they carry about the streets in procession. The

great lords are carried in chairs, but not without the prince's permission.

At Madura there are a great many buffaloes, which they employ in tilling the ground, and which they yoke in the same manner with the oxen. It is a capital crime to kill an ox, a cow, or a buffalo. The Indians have as great a horror at the flesh of these animals, as the Europeans have at that of horses. None but the most contemptible classes dare eat these animals when they die of themselves.

They are not of the same opinion with respect to bald mice, rats, lizards, and even certain white ants. When these ants become winged, and taking flight fall in the marshes, the Indians there gather them, and represent them as a very delicious food. Goats, sheep, and fowls are the most ordinary food. There is a species of fowls, whose skin and bones are entirely black, but they are as good as the others. The Indians also love fish, which they dry in the sun, but they do not generally eat them till they are spoiled and corrupted. They then think it best, because it gives a relish to the rice, which is insipid.

The asses are used in the same manner as in Europe : But 'tis singular, that there is a whole class or tribe who pretend to be descended from an ass in a direct line, and boast of it. This class is one of the best, and is even that to which the king belongs. Those belonging to this class treat asses like their brothers. They stand up in defence of them, and do not permit too heavy loads to be laid on them ; nor do they suffer any one to beat them excessively. If they saw any person using these cruelties, they would forthwith bring him to justice, where he would be fined. They are permitted to lay a sack on the back of that animal,

animal, but if they lay any thing above the sack, the cavaravadouquer (the name of this class) would make him suffer for taking such a liberty. They have less charity for men than for these creatures ; in rain, for instance, they will give shelter to an ass, and refuse it to his driver, unless he belongs to a good tribe or class.

In the Indies there are several kinds of rats, and the Indians go in quest of these animals just as the Europeans do in search of rabbits ; some of them greatly resemble moles in the smoothness of their skins, but they are not altogether so black. The Portuguese call it the scented rat, which is said to attack and destroy the serpents. There is another species which digs into the earth like the mole, but these are generally found only in houses.

There are also cats which yield musk, and produce this odoriferous substance by rubbing themselves against a stake, and from this stake they take the musk. As for serpents they are very numerous, and some of them so venomous, that a person bit by them drops down dead before he can walk seven or eight paces, for which reason they are call'd serpents of eight paces. There is another which the Portuguese call cobra de capelo, the hooded serpent, because, when it is provok'd, it raises the half of its body, and creeps on its tail ; its neck is enlarg'd in form of a domino, on which are three black spots, which, in the opinion of the Indians, add a beauty to this serpent, for which reason they call it the good or beautiful serpent. They have so great a respect for it, that if they should kill it, they would think themselves guilty of sacrilege.

Among other insects there are green flies, which shine in the night, and delight in moist places. When there is a great many of them, and  
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when the night is dark, they make a very beautiful appearance, like so many small fluttering stars. There are ants of several kinds, but the most pernicious is that call'd caria. This insect is the ordinary prey of squirrels, lizzards, and some birds. To secure itself from so many enemies, it has the cunning to form a bank of earth almost as high as a man. For this purpose it brings together mortar, which it moistens, and compacts so firmly, that a strong and almost continual rain is necessary to give it a sensible shock. The fields are full of these banks, and the labourers do not beat them down, either because they are extremely firm, or because in a few days they would be built again. These banks are full of apartments, in form of irregular canals. The caria comes out at certain hours to go a foraging, cuts the grass very quickly, and carries it into its habitation.

There is another smaller species of caria, which generally shelters itself in houses. In the center of its habitation there is a comb almost like that in a bee-hive. Hence this insect climbs to the roofs of the houses, but only advances in proportion, as it covers itself, and by forming with the earth which it brings, a certain pipe, which serves as a road to it. It gnaws the leaves of the palm-tree, and the straw and stubble with which the houses are thatch'd. They have bees, but are not at the pains to make hives for them; however, they neither want wax nor honey, both of which they take from the hives which the wild bees have made for themselves on the mountains.

We shall conclude with considering the manner in which the Indians are cloath'd. Their shoes are a kind of pattins, not unlike those us'd in France by some of the religious of the order of St. Francis. They are only kept on by a peg of wood,

wood, which is put between the great toe and that next to it. The king and the great lords use silver pattins. The Indians pretend that shoes of this kind are the most proper and commodious for their country. They are the most proper, say they, because they can wash them at all times, and wash their feet in them, which is very necessary, on account of the heat ; they say they are the most commodious, because nothing is more easily put off and on. 'Tis not reckon'd genteel to wear sandals, for which reason they always throw them off before they approach any person who merits respect.

As for the Indian modes, they are almost always the same, since that people rarely vary their usages, especially in their manner of cloathing themselves. The common people give themselves little trouble about it, for they cover their body only with a piece of cotton ; and it often happens that the poorer sort have some difficulty to procure a piece of this stuff to cover themselves. The great lords cloath themselves very elegantly, according to their taste, and the heat of the climate. They cover themselves with very white, fine, and transparent cotton, which descends to their heels. They have red breeches and stockings all of a piece, which come no farther than the instep. They wear a kind of red leather pumps embroidered, whose quarters behind fold under the heel. They wear ear-rings of gold or pearls. Their girdle is a piece of silk embroidered with gold, and their bracelets are silver. They wear gold chains or gold beads about their necks.

The ladies have nearly the same dress, and are only to be distinguish'd from the men, by the different manner in which they adorn their heads.

## C H A P. XXII.

*The shrub which produces cotton; manner of carding, spinning, working, and bleaching it.*

**C**OTTON grows in the Indies, on a shrub three or four feet high, which when full grown, bears a green fruit, of the bigness of a young walnut; and when this fruit begins to ripen, it opens in the form of a cross, at which time the cotton begins to appear. When it is quite ripe, it divides itself into four equal parts, which are supported only by the stalk. They then gather the cotton mix'd with the seed.

But as this seed adheres closely to the cotton, they separate it by means of a small and pretty curious machine, about thirteen or fourteen lines in diameter, and four inches in length. Two axes enter into two pieces of wood, which are in height about a cubit, and two inches in thickness. These two cylinders or axes are placed immediately over each other, at the distance of a line, or a line and a half at most, in such a manner that the seeds of the cotton cannot pass betwixt them. But what is most ingenious in this machine is, that by the motion of the handle, which holds the cylinder above, these two cylinders move in a contrary direction: This is perform'd by means of the two pieces of wood, which communicate with the two axes, on the side opposite to the handle, and being in the form of screws, grapple in each other, whence it happens, that the handle making the higher cylinder turn in a certain direction, the  
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end of the same cylinder grappling in the end of the other, makes it turn in an opposite direction.

Hence it happens, that the cotton applied to these two cylinders is drawn through, and drops the seeds that were mixed with it in its passage. These seeds are preserv'd to sow the lands that are proper for cotton.

They then card the cotton, which is first done with the fingers, much after the manner of making lint; afterwards they spread it on a sort of mat, and finish carding it with a pretty long bow, which they lay upon it, and draw the cord, so that the vibrations falling frequently and strongly upon the cotton, whip it, as it were, and make it very fine and delicate.

They then give it out to be spun, to men and women, which is perform'd with a wheel, smaller than those us'd in Europe. The beauty and goodness of the thread depend almost intirely on the skill of these artists; there is a fine and a coarse species, and between these extremes there are many sorts and degrees.

Besides, they do not wash the thread, but after having given it to the weaver, he immediately chuses the largest thread for the woof, and reserves the finest for the weft, which supposes plainly, that in thread of the same kind there is always a difference. They boil some time in water the thread design'd for the woof, and when it is very hot, they plunge it in cold water; which is all the preparation necessary, before they put in the shuttle.

The thread which serves for the weft is prepar'd in the following manner: They steep it well in cold water have diluted a small quantity of cows dung, strain out the water, and so leave this thread wet for three days,  
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in an open vessel, and then dry it in the sun ; when it is sufficiently dry, they divide it in the following manner.

They in a strait line, and in a clean place, plant little laths of bamboo, of the height of three feet, and at the distance of a cubit from each other, in a space equal to the length of the web they design to make ; afterwards children interlace the thread in the little laths of bamboo ; the number of threads being complete, they take care to insert new laths among the former, to keep the thread even, and to prepare it the better ; after this, they roll up the thread and laths, which form, as it were a long hurdle, and thus they carry it to a pond, where, having let it steep a quarter of an hour, and trampling it under foot, that the water may penetrate more easily, they dry it. After this they examine the threads to put them in order ; for which purpose they replant the hurdle upon the ground by the ends of the laths, and the weavers seated near the hurdle, look over the threads one after another, and range those that are out of their places.

After this operation they think of giving the thread the necessary preparation for working it. Then they pull up the hurdle, and stretch it upon horses or supports placed at equal distances, of the height of the laths, and give it what they call the cange. This cange or cleansing is nothing else but the liquor of boil'd rice, which having been kept a long time, is become very acid. They rub the thread with this cange, first with their fingers, and afterwards more thoroughly with a kind of brush, the hairs of which insinuating betwixt the threads, cleanse them perfectly, unite them, and press together all the parts. This operation requires some time ; for, first, they cover  
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the thread with a glue made of boil'd rice, and, to spread it the better, use the brush a second time. They then allow this thread to dry in this condition, and for the last operation oil it, which is done by brushes dip'd in that liquor. We must observe, that these different preparations of the thread must be applied to both sides of the hurdle, in such a manner, that after having prepar'd one side, they turn the hurdle on the other, to give it a like preparation.

When the thread thus prepar'd is very dry, it is so beautiful, so neat, clean, and equal, that it resembles silk. Without this cange, and other preparations, the cotton would not have near the beauty it has; for the cange being acid, unites and closes at once the minute filaments, which compose the thread, and the glue being put upon it, holds and binds them in this condition, by giving them more body and more consistency, in order to be work'd. Lastly, the oil serves to soften and render the thread more flexible. When it is thus prepar'd, they put it to the loom, make muslins, salempores, and, in general, all those beautiful stuffs which we meet with in the Indies, the difference of which depends on the thread, and the skill of the weaver.

The manner the weavers have of making these cotton stuffs, is nearly like that followed in Europe. When the web is finish'd, they must bleach it, and give it that pleasing lustre for which cotton is so famous.

They therefore put it into the hands of the bleacher, who steeps it first some time in cold water; then taking it out, and pressing out the water, he steeps it again in a second water, which is mix'd with cows dung; when he has wrung out this water, he spreads it on the ground, and leaves  
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it some time in the air ; then he twists it in the form of a concave cylinder over the mouth of a great vessel of boiling water. The vapour arising from this boiling water penetrates the web, previously impregnated with the most subtile salts of the cows dung, and by its heat dissolves, and gets out the foulness and dirt of the web : This is the first lie which they give it. They leave it in this condition a whole night, and the next day wash and beat it very well upon a stone ; so that a part of the dirt is separated from it.

The second day they put the same web into a great earthen jar, where they dilute quick lime with a kind of white and light earth, which without doubt is filled with a great deal of salts : They mix this quick lime and earth in equal quantities, and then dip and rub the web thoroughly in this liquid ; after which they wring out the water, and leave the web some time stretched out, and exposed to the air ; they wring it again, and having rolled it as before, about the mouth of a great earthen vessel, wherein they have put water with the same mixture, they give it, the second lie, which by filtrating again thro' all the parts of the web, by the help of those salts with which it is impregnated, removes all the remaining foulness, and makes it perfectly white. If they find the web not sufficiently white, they repeat this lie ; after which they cleanse it, and beat it well in clear water, and afterwards dry it in the sun.

There is another method which they use for the salempores, and other similar stuffs. They make ten or twelve foldings ; and after smoothing them on an even board, beat them with a proper instrument, to give them their finishing lustre.

## C H A P. XXIII.

*Description of the isle of Bourbon ; stature of the inhabitants ; trees, fruits, and particular animals found in this island ; description of the lizzard, flying squirrel, flying fish ; of the horned fish, the racoon, and the marsouin.*

**I**N the isle of Bourbon all sorts of refreshments are to be found, and the air is particularly excellent. It belongs to the French East India company, who have a governor there. It was at first inhabited by some French refugees, who came from the island Dauphinè, which is pretty near it. It became peopled by degrees, especially by the pardon that was given from time to time to the pyrates, who infested those seas.

The chief boroughs or habitations of this island are St. Denis, St. Paul, and St. Sufanna. There is neither harbour nor fortifications ; so that ships are neither shelter'd from the violence of winds, nor raging of the sea.

The island of Bourbon is about fifty leagues in circumference, and in some places abounds with high mountains, one of which belches out flames, and fills the neighbourhood with bituminous matter. This fire is perceiv'd in the night-time, at the distance of twenty-five leagues. There are fine spacious forests, where we find a number of trees very proper for the building of ships. It is full of cattle, fowls, and game, and is fruitful in rice, sugar, and a great number of excellent fruit trees ; and among the rest, some vines which yield very good wines.

The best animal found here, whether for taste or wholesomeness, is the land tortoise ; and the most agreeable fruit is the ananas. This tortoise is of the same figure with those in Europe, but very different in size ; they say it lives a prodigious time, that several ages are requir'd to bring it to its full growth, and that it can live several months without food.

They have kept some young ones in the island, which at the end of twenty years increas'd in bulk only some inches.

As for the ananas, it is a fruit of an oblong figure, and of the bigness of a melon : It is covered with short leaves, dispos'd very much in the same manner as the divisions of a pine apple ; and it is crown'd with a tuft of leaves something longer : It grows on a plant resembling an artichoke, and has the taste of several fruits ; but more especially of a quince.

In this island are several sorts of curious trees and plants ; the shrub that bears coffee, the tamarisk, the cocoa-tree, the tree from whence benzoin distils, the cotton-tree, the aloes-tree, and the ebony. Black ebony is not most esteem'd, because the yellow is more beautiful. Wild coffee is very common, and tho' wild is very good.

The bat of this island is very singular, and one might call it the flying fox, since it very much resembles this animal in size, hair, the head, ears, and even teeth. The female has two teats, and under each wing a bag to carry her young in. The length of their wings is above four feet from one extremity to the other. Their flesh is so good to eat, that they go a hunting for them with the same eagerness as with us they go a shooting partridges.

But tho' this island be so agreeable, it does not come near to the beauty of the coasts of Java and Sumatra; plains cover'd with orange-trees, cocoa, and other fruit-trees; with a number of rivulets, which water them; hills adorn'd with delightful groves, forests for ever green; villages and towns shining with all the rural graces concur to render these coasts the most charming in the world. The Javanese are neither black nor white, but of a reddish purple: They are mild, familiar, and complaisant.

In the same road we find Poulo-condor, which is a little archipelago, about fifteen or twenty leagues to the south of the kingdom of Camboge. It consists of eight or ten islands, or rocks, the greatest of which is not above four leagues in length. This is the only one inhabited, and there is no more than one village situated in the only plain found in it.

The houses of these islanders are only a confused pile of bamboo, covered with a very long grass, which they cut on the borders of their rivulets. In these huts there is neither a door to enter at, nor a window to admit the light. They leave one side of their habitation quite open, and on that side make the covering or roof lower. They raise their floors some feet from the ground, and by that means avoid the dampness, and obtain a place for their domestick animals during the night, whose smell does not offend them at that distance. The floor at certain distances is rais'd four or five inches: They receive strangers in the middle, on mats: Their reception is kind and affable, and they entertain them with arrack, betony, and a pipe. They are very much tann'd, and almost intirely naked, except in their ceremonies, wherein they dress themselves, and some of them pretty  
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neatly. The blackest teeth are esteem'd amongst them the most beautiful, wherefore they omit nothing to increase this colour. They let their hair grow, which commonly is very long.

There is but very little rice in this island ; some potatoes, and some very good ananas. The mountains are almost intirely cover'd with beautiful trees, proper for all sorts of works, and even the masts of ships. There is a very common tree from which distils a rosin, which the inhabitants make use of for their flambeaux. To gather this rosin, and make it distil more freely, they make a cavity in the trunk of the tree, the bottom of which forms a kind of receiver. In a certain season of the year they light a fire in this cavity, the heat of which causes the liquor to flow, and fill the receiver. In this liquor they dip little thin slips of wood, and afterwards inclose them in long leaves of trees. When the whole is dry, these pieces cover'd with rosin enlighten a whole chamber, but soon fill it with smoak.

Nothing is more common at Poulo-condor than the arrack nut, and leaf of betony. The islanders carry this last about with them, which they chew continually. No game is to be found in this island except wild fowl and stock-doves ; but there are abundance of serpents and lizzards of a monstrous size. There are serpents twenty-two feet long, and lizzards, which some call govenas, that are seven or eight feet long.

What is most curious in this island is the flying lizzard, and squirrel. The flying lizzard is little, and is not more than seven or eight inches long ; the squirrel is of the size of those in Europe. Both of them have very short wings, which extend along the back, from the fore to the hinder feet ; the squirrel has them cover'd with a thin fine hair :

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Those of the lizzard are compos'd of a delicate pellicule. They are seen to fly from tree to tree, at the distance of twenty or thirty paces, but whether they could fly further is unknown. The lizzard has this further particular, viz. beneath his head a purse of a considerable length, and pointed below, which is inflated from time to time, especially when he flies.

The island of Poulo-condor is subject to the king of Camboge, which kingdom, as well as these of Cochinchina and Tlionpa are badly govern'd. These nations have scarce any commerce with their neighbours, and have little order or union among themselves. The customs and manners of these people approach in certain things to the customs of the Indians, and in many to these of the Chinese. They believe the transmigration as well as the Indians, which, however, does not hinder them from eating all kinds of animals. They have a great veneration for the horse and elephant, and have pictures of them in their houses; the noblest recompence which, in their opinion, a man can have after his death, is, that his soul should pass into one of these beasts. They look on Confucius as the chief philosopher of the universe, and pay great honours to their dead ancestors, and all those of their own nation, who have during life distinguish'd themselves. They have, for this purpose, in their houses, and abroad, little chapels, where they burn incense, or little cakes of frankincense.

But the most sacred place among them is the publick square, in the midst of which is erected a large beam, cross'd by another near the top, which is a little inclin'd; probably they place on it a kind of colours, which they call touvo. Round it are placed certain little oratories,



were they make their profound prostrations, burn a number of small candles, offer rice, and sacrifice victims, especially goats. A great feast follows these ceremonies, wherein they never fail to get drunk with vague, which is a kind of brandy distill'd from rice; then they have dancing, buffoonry, and often blows and quarrels.

The passage from Poulo-condor to China is scarce three hundred leagues, which they commonly perform in eight or ten days. The coasts of the southern parts of China are bordered with an infinity of little islands, in the midst of which it is not easy to find the mouth of the river Canton. Nothing can be more charming than the prospect which this river presents. On each side are spacious plains of rice, green as the most beautiful meadows, in which the sight is lost, and which are intersected with a great number of canals; so that the boats which one sees come and go at a distance, without seeing the water which bears them, seem to sail on the grass. At a greater distance one sees rising grounds covered with trees, and dispos'd by art along the vallies, as the ancient theatre of the tuillery garden. All this is mixed with so many villages of a rural cast, and so variegated, that none can be weary of seeing them, and must feel a regret to leave them.

The city of Canton is larger than Paris, and contains at least as many people. The streets are long, strait, close, and narrow. They are pav'd with large flat stones, which, however, are not found every where. There is a small number of pretty broad streets, where we here and there find very beautiful triumphal arches. There are some temples of their idols surrounded with the cells of their bonzes, which have a very singular and magnificent

nificent appearance. Confucius's hall, as well as the academy where the literati assemble to compose their exercises, are curious pieces of architecture. The gamens or palaces of their mandarins have likewise their beauty and grandeur, tho' not equal to what is call'd beautiful and grand in Europe.

The houses inhabited by the people are very low, and almost all shops. The most beautiful parts resemble pretty much the streets of St. Germain, during the fair. There are almost every where as many people as at this fair, when most frequented ; so that it is difficult to pass and repass. We see few women, and most of the men in the streets are poor people loaden with burdens ; for there is no other method of transporting the goods and merchandize, but on the shoulders of men. These porters have mostly their heads and feet bare, tho' some of them have a large straw hat, of an odd figure, to defend them from sun and rain. What we have said gives us a new idea of a city which has no resemblance to Paris. Tho' there were nothing but houses only, what effect would be produced on the eye by intire streets, where one sees no windows, and nothing but shops, closed for the most part with hurdles, or bamboo, instead of doors.

When we come from the country, and go from the old into the new city, we see a vast number of agreeable gates. It is remarkable that there are gates at the end of all the streets, which are clos'd a little later than the city gates, so that every one must retire to his quarter as soon as the day begins to fail. This policy remedies a great many inconveniencies, and causes all to be as calm almost in the night in this city, as if it was but one family.

The apartments of the mandarins have something surprizing in them to strangers. We must pass a number of courts before we come to the place where they give audience, and receive their friends. When they go out, their retinue is majestic. The Tsonglour, a kind of mandarin, who has the superintendency of two provinces, never goes abroad without an hundred men at least. This train causes no trouble, since each one knows his post; a part go before him with different symbols, and very odd dresses. There is likewise several soldiers that march on foot: The mandarin is in the midst of this attendance, seated on a high and richly gilt chair, which six or eight men carry on their shoulders. This cavalcade often takes up a whole street, while the people place themselves on both sides, and out of respect stand still till all is pass'd.

The bonzes are very numerous, and wear long robes that fall down to their heels, with huge sleeves which very much resemble those of some European clergy. They live together in their pagods, as in convents, beg in the streets, rise in the night to adore their idols, sing in several choirs, in a manner that has some resemblance to ours. Yet they are very much despised by the better sort of people, because they know that most of them are persons abandoned to debauchery.

Another particularity which we are not to omit, is, that there is a kind of floating city on the river Canton; the boats touch each other, and make a kind of streets. Every boat or barge lodges a whole family, and like regular houses, has all the necessary apartments. The poor people who live in these floating houses, go in the morning either a fishing, or to labour in the rice fields, which are sowed and reaped three times a year.

Let us finish this chapter by the description of some particular animals. The horned fish, or the devil, has its body made like a chest, tho' smaller at one end, with a flat tail, very long, with four equal sides, and almost of the same breadth from one end to the other. All its body is hard, and marked every where with hexagonal figures regularly placed, and mixed with small asperities, like shagreen.

The requin, or shark, is one of the most dangerous animals of the sea; there are some of them taken above twelve feet long. He has a throat capable of swallowing a man whole. He has five rows of teeth, which are like a grove of steel points. He is always accompanied by several small fish, which swim before him, and are called the shark's pilots. There are other smaller fish of a different sort, which stick to his body, even when he is taken, and which they call succais. A shark will sometimes follow a ship two or three days in hopes of some prey.

The marsouin is a true sea-hog. He has all over his body a thick fat, which is very white. He has no ears, but has on his head an opening, by which it is said that he breathes. 'Tis certain he is sometimes seen to raise his head above water, and replunge himself soon after. He has lungs, and all the inward parts resembling a hog; his blood is warm and copious, he swims with incredible swiftness, and leaps sometimes fifteen or twenty feet above the water. The marsouin, as well as the shark, brings forth her young like terrestrial animals. The females have commonly, at one time, ten or twelve young, which are generally very fat.

There are two sorts of flying fish; one small, that has but two wings; the other large, which has four. The greatest is not in length above a foot

foot or fifteen inches. They both fly a considerable way ; and when the bonita, or gold fish, pursues them, we see them rise from the sea like a covey of partridges, and replunge themselves at the distance of a hundred, or a hundred and fifty paces. The bonita leaps after them a great height ; and if it fails of its design, it follows on the surface of the water, to catch them when they alight. This chase is a pleasant sight, especially when there are a great number of fish, which pursue, and are pursued. This pleasure is entire, when the birds of prey, as it sometimes happens, join in the fray ; then the flying fish has no retreat, either in air or water.

#### C H A P. XXIV.

*The fabulous paradise of the Indians ; their religion, temples, and sacrifices ; distinction of their tribes ; extraordinary custom of the labourers ; maxims of the Indian physicians ; manner in which they treat their sick.*

THE chorkam, or the paradise of the Indians, is the recompence of those who have offered the famous sacrifice of the Ognan. The most beautiful women are supposed to constitute the happiness of this place, where there is a tree imagined to furnish all that can be desired.

The Indians acknowledge thirty millions of gods ; there are three principal ones, whose functions are different. To the first, they attribute the creation of the world ; to the second, its preservation ; and to the third, the power of destroying it.

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These three gods are independent of each other, and have each their residence ; they have often fought together, and beheaded each other. They have likewise, as they say, often appeared on earth under different forms, as of a fish, a hog, &c. Every object that has been subservient to these gods is deified, for which reason we see in almost all their temples, the figure of an ox, to which they offer sacrifices, because formerly one of their gods rode upon it. But what is most singular is, that these people have a god, whom they call Christen, born at midnight in a stable, and adored by shepherds. They observe a fast on the eve of his festival, which they celebrate with great noise. The life of this god is a medley of infamous actions.

In this confusion all the solemnity of the festival consists, which always concludes with an excess of debauchery. The Indians seldom meet in their temples, where no light comes but by a narrow door. Those who revere their gods, send sufficient sacrifices to the priest, which generally consist of flowers, incense, rice, or pot-herbs. Generally none are present at the sacrifice, which is offered in the following manner :

The priest prepares the repast in a corner of the temple ; then he pours upon the idols several jars of water, and washes them for some time ; he then puts fire on a potsherd, in which he puts incense, and presents it to the nostrils of each idol, pronouncing at the same time certain mysterious words. After this he puts on a plate, viz. four or five leaves stitched together, the rice and pot-herbs, and walking round the idols makes several bows to them, as it were to invite them to the feast ; then he begins to eat with a keen appetite

petite what he has presented to the deities he adores.

Most of the princes of these countries are extremely superstitious, and it costs several of them large sums to celebrate the feasts of their idols. They sometimes undertake long and tedious voyages, to carry considerable sums of money to certain divinities, but these sums soon fall into the hands of the Moors who are masters of the country.

One of these princes orders one of his gods to be continually carried before him in an open vehicle, which is preceded by a horse and an elephant, which he has made him a present of. The noise of several instruments brings together an incredible number of Indians who come to worship the idol. Now and then a herald commands silence, and makes a speech in praise of this deity.

These people are divided into tribes, as the Jews formerly were, with whom it seems they have had some commerce; for in customs, ceremonies, and sacrifices, we discover many traces of the old law, which they have disfigured by a number of extravagant fables.

There is a tribe which bears the *lingan*; this is an infamous figure which they wear about their necks, to denote their devotion to one of their gods. They keep this with great care, and offer daily sacrifices to it. They are persuaded, that should they once lose it, nothing but death can atone such a crime.

We read in their histories, that one of these *linganists* having lost his *lingan*, went to confess to his *gourou*, or spiritual father. He declared, that he ought to resolve on death, and that his death only could appease the anger of the gods, at the same time conducting him to a pond, in order to drown him. The *linganist* seemed contented; but he begged the favour of the *gourou* to lend him  
him

him the *lingan* about his own neck, to perform, for the last time, a holy sacrifice. As soon as he had got it he let it drop into the water ; We are both now, cried he, without *lingan*, wherefore we ought in company to throw ourselves into the pond to appease the fury of our gods ; and immediately he began to pull him by the legs, that they might share the same fate ; when the *gourou* taking the *linganist* by the hand, said, Stay, my son, I can dispense with the just penalty ; I will repair your fault by giving you another *lingan*.

There is a very odd custom in the class of labourers ; for when they pierce their ears, or marry, they are obliged to cut off two of their fingers, and present them to the idol. They go on that day to the temple in triumph ; and there, in presence of the idol, they whip off in an instant two of their fingers with scissars, and then apply the actual cautery, in order to stop the hemorrhage.

People are excused this ceremony when they present two fingers of solid gold to the idol. Others cut off the noses of those they can decoy, and their prince recompenses them in proportion to the number of the noses they bring him : he orders them afterwards to be carefully strung, and hangs them up at the temple-doors of their goddesses.

In France we mark criminals with a flower-de-luce. In the kingdom of Carnate, they give money to have their shoulders burnt. Men and women croud to the *gourou*, who has always a red hot iron in a chaffing-dish. He begins the ceremony by being well paid, without which neither prayers nor tears can oblige him to do the favour they ask of him. When he has got the money, he charitably applies to their shoulders the red hot iron, which imprints the images of their gods,  
without



without their shewing the least impatience during the operation.

Their government is as odd and strange as their religion, since the prince's will takes place of all justice. The common people are in a kind of slavery, and possess no lands which they can properly call their own, since they all belong to the prince, who orders them to be cultivated by his subjects. At the harvest time he orders the produce to be carried off, and scarce leaves subsistence for the miserable labourers. It is a crime in private persons to have money; and those who have it, bury it with care; otherwise, under a thousand false pretences, they find means of defrauding them of it. Their princes only exercise these cruelties towards the people, because the Moors, who have enslaved the Indies, demand exorbitant tributes of them, which they are obliged to furnish, otherwise the country would be plundered.

The greatest crimes are not punished with death, and provided they can but find money, they are sure of impunity.

In Europe the chief families are in possession of thrones, but of all the princes of Carnate, there is not one of the first class, and some of them are of the lowest tribes. Whence it happens, that there are some princes, whose cooks would think themselves dishonoured, and would be so in effect, if they should eat with their masters; and their relations would expel them from their tribe, as persons lost to honour.

Physicians are not wanting in the kingdom of Carnate; but they are true quacks, very ignorant, and make experiments at the expence of those they attend. Their drugs and medicines are found in the woods, and consist of certain simples, from which they express the juice, and give it to the patient.

patient. In fevers, of thirty or forty days duration, they only give the sick person a little hot water. Their maxim is to remove the distemper by weakening nature, and if the patient dies, It is, say they, the violence of the disease which carries him off, and not the want of proper nourishment.

It remains that we speak of two famous ceremonies that are in use in the kingdom of Carnate. The first of these is the pavadam, which is observed in the following manner.

One of the chief dasseris (these are the men who make profession of particularly honouring the god Vichnou) gives himself a wound in the thigh or side ; instantly the air resounds with cries, noise, the sound of horns, and brass plates, which the dasseris strike against each other. They raise a kind of seat for the mad fool, who has thus wounded himself ; and if we may believe them, they leave him without drink, meat, or even dressing his wound, until some famous dasseris comes to raise this pretended dead man to life. For which reason it is always expensive to him on whom the pavadam is performed.

As the Indians are persuaded, that if the dead be not quickly rais'd, some public misfortune will happen, every one is eager to accommodate the affair. When they are agreed about the sum that is to be paid, the noise and outcries are renewed ; and we hear a multitude of confus'd voices, which bawl out Govinda. Then he who is to call the dead to life again, after several prayers and grimaces, as if he was possess'd by his god Govinda, orders the tent to be open'd, on which the pretended dead man immediately begins to dance with the rest of the dasseris ; after which he is conducted in triumph to the city, and the ceremony is ended by a great feast, to which they  
invite

invite the dafferis, and also present them with pieces of stuff.

The Moors do not pay these impostors ; for if it happens, which is very uncommon, that the dafferis perform this kind of pavadam in the places where they are masters, it is by blows that they raise them to life, and dissipate the tumult.

After the pavadam comes the famous sacrifice of egnam, which is celebrated with extraordinary pomp during nine days. They sacrifice a ram in it, and offer the sacrifice out of the city. The high priest, whom they call saumeage, is assisted by twelve other ministers, or bramins, who are dress'd in new habits of a yellow colour. They build for this purpose a house out of the city, where the sacrifice is to be perform'd. They dig a ditch, in which they light a fire, which is to burn night and day, and which for this reason they call the perpetual fire ; they throw into it different kinds of odoriferous wood, and pour in oil, butter, and milk, while they recite certain prayers taken from the books of their law. They then proceed to the slaughter of the ram. They tie his feet and nose, and stop his nostrils and ears to destroy respiration ; after which the strongest priests give him blows with their fists, while they pronounce certain words with a loud voice. When he is half dead, the high priest opens his belly, and draws out the peritonæum with the fat, which is put upon a little bundle of thorns, which they hang over the perpetual fire in such a manner, that the fat, as it melts, falls in it drop by drop. The remainder of the peritonæum, and the fat, being mixed with butter, is fry'd, and all the sacrificers must taste of it. They distribute part of it to the most considerable persons of the assembly,

assembly as a holy thing, while the rest of the victim is cut into morsels, which they boil, and throw in little pieces into the fire; for nothing must remain of this kind of holocaust. The sacrifice being finish'd, they give a feast to a thousand bramins, which is likewise practis'd during the whole nine days.

On the ninth day the high priest is carried into the city in a chariot, drawn by bramins, and the ceremony ends by presents made to these, and especially to the high priest and his twelve assistants. These presents consist of pieces of cotton and silk, and large ear-rings of gold, which reach almost to their shoulders. This is the mark which distinguishes the high priest, and the chief doctor of the law.

## C H A P. XXV.

*The stuffs in the Indies; their manner of designing flowers, preparing colours, and applying them; a secret to make indigo, how they prepare it; how they bleach the web to prepare it for the reception of different colours; description of the Indian pencils.*

THE Indian webs derive their value and price from the sprightliness, tenacity, and duration of the colours with which they are painted, which are so contriv'd, that instead of losing their lustre when wash'd, they become more beautiful.

## I.

Before they begin to paint the stuff, they must give it the following preparations. First,

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Take

Take a piece of new and close stuff, the usual length of which is nine cubits, and half bleach it, in the manner we shall hereafter mention. Secondly, Take dried fruits call'd cadou. or cadoucaie, to the number of twenty-five, or, to speak more exactly, the weight of three palams. This Indian weight is equal to an ounce and half a quarter, since fourteen palams and a quarter make a pound : Break this fruit to get out the kernel, which is of no use, and when dry reduce it to powder. The Indians for this purpose use a flat stone, and a cylinder, which is likewise of stone, and which they employ much after the manner of pastry-cooks, when they prepare their paste. Thirdly, Pass this powder thro' a sieve, and put it in about two pints of buffalo's milk, increasing the milk and weight of the cadou, according to the quantity of the stuff. Fourthly, A little time after dip the stuff as often as you find it necessary, that it may be well moisten'd with the milk. You must then take it out, wring it strongly, and dry it in the sun. Fifthly, The next day you must slightly wash the stuff in ordinary water, wring out the water again, and after drying it in the sun, you must leave it at least a quarter of an hour in the shade.

After this preparation, which may be call'd internal, we must proceed to another, which, if you please, you may call external, because it regards only the outside of the web. To make it smooth, and that nothing may obstruct the pencil, they fold it in four or six doubles, and with a piece of wood for that purpose, beat it upon another piece of smooth wood, observing to beat it equally ; and when it is sufficiently beaten in one direction, they fold it differently, and repeat the same operation.

It is proper to make here some observations, which will not be intirely uselefs. First, This fruit call'd cadou, is found in the woods, upon a tree of a moderate height, which grows almost every where, but principally in Malleialam, a mountainous country, as its name signifies, which extends itself considerably along the coast of Malabar. Secondly, The fruit dried, which is of the size of a nutmeg, is employed in the Indies by physicians, and is an ingredient in those medicines which they give to women newly deliver'd. Thirdly, tho' it is very sharp to the taste, yet if one keeps a little bit of it some time in the mouth, he will find in it something of the taste of liquorice. Fourthly, If after we have moisten'd moderately, and chew'd a piece in the mouth, we take it in our fingers, we find it glutinous: It is partly owing to these two qualities, viz. its sharpness and unctuousity, that we are to attribute the adherence of the colours in the Indian stuffs, but especially to its sharpness. This is at least the opinion of the Indian painters.

It is long since they have sought after the art of fixing colours in Europe, and giving them that adherence which is so much admir'd in Indian stuffs; perhaps the secret would be found out, if they once perfectly understood the nature of the cadoucaie, especially its principal quality, which is its sharpness. Might they not find out analogous fruits in Europe? Do not galls, and medlars dried before they are ripe, and the bark of pomgranate, participate very much of the qualities of the cadou?

Let us add to these observations some experiments that have been made upon the cadou. First, Lime dissolv'd in an infusion of cadou produces green; if there is too much lime, the colour be-

comes brown; if they pour upon this brown tincture too great a quantity of this infusion, the colour appears first whitish, and afterwards the lime is precipitated to the bottom of the vessel. Secondly, A white cloth dipp'd in a strong infusion of cadou, contracts a yellowish colour, that is very faint and pale; but when the buffalo's milk is mix'd with it, the linnen takes a faint orange colour. Thirdly, Having mix'd a little of our European ink, with the infusion of the cadou, they have observ'd in the several parts of the liquor a blueish pellicule, like that which is found on ferruginous waters, with this difference, that this pellicule was within the water at some distance from the surface. It would be easy to make experiments upon the cadou, in Europe because it may be had from the Indies, this fruit being very cheap there.

As for buffalo's milk, which they mix with the infusion of cadoucaie, they prefer it to cow's milk, because it is much fatter and more unctuous. This milk produces the same effect in these stuffs, as gum, and other preparations used for paper, that it may not sink. In reality they have experienced that our ink painted on a web prepar'd with cadou, extends itself very much, and penetrates to the other side, which is also the fault of the black paint of the Indies.

What yet remains to observe is, that they do not use indifferently all sorts of wood to beat the stuffs, and smooth them. The woods on which they put them, and that with which they beat them, are generally the tamarisk, or another tree call'd porchi, because they are extremely close-grain'd when they are old. What is used in beating, is call'd catta pouli. It is round, a cubit or thereabouts long, and as thick as the thigh, except at the extremity, which serves as a handle. Two workmen

workmen seated opposite to each other, beat thoroughly the stuff. The sight and experience has taught them by degrees to know when the stuff is sufficiently beaten and smooth'd as it should be.

## II.

The web being thus prepared, they must design on it flowers, and other things, which they want to paint. The Indian workmen have nothing particular in their manner, but use the same method as our embroiderers. The painter takes care to draw his design on paper, pricks the principal figures with a fine needle, then applies this paper to the stuff, and afterwards passes the powder of charcoal thro' the prickings, by which means the design is traced upon the stuff. Every kind of charcoal is proper for this purpose, except that of the palm-tree, because in the opinion of the Indians, it would tear the web. Afterwards over these figures they draw with a pencil black or red, as the places require; after which the work is compleated in its design.

The principal concern now is, to paint colours on this designing. The first colour applied is black, which however is not much used, except for certain outlines, and the stalks of flowers. They prepare it in the following manner: First, They take several pieces of the scorix of iron, and strike them against each other, to make the most brittle parts fall off, and reserve such pieces as are nine or ten times as large as an egg. Secondly, They add four or five pieces of old or new iron; for it is not material which is us'd. Thirdly, Having laid the iron and its scorix on the ground, they make a fire over them, with the leaves of the banana tree, which are best for this purpose. When the iron and the scorix become red hot,



they take them out, and let them cool. Fourthly, They afterwards put them into a vessel that contains eight or ten pints, and pour hot canje upon them; that is to say, water in which they have boil'd rice, taking care that there be no salt in it. Fifthly, They expose all to the hottest sun; and after having left it a whole day, they pour the canje on the ground, and fill the vessel with callou; that is to say, with palm, or cocoa wine. Sixthly, They expose it again to the sun for three or four days together, and the colour which serves for black is then prepared.

There are some observations to be made on this preparation: The first is, That you must not put above four or five pieces of iron to eight or nine pints of canje, otherwise the tincture would grow reddish, and corrode the stuff. The second regards the quality of the palm-wine, or that distilled from the cocoa-tree, which grows so four in a few days, that they make vinegar of it, which they use instead of yeast, to ferment paste. The third is, That the want of this wine is supplied by the kevaron, a small grain, which a great many Indians live upon. This grain for colour and size very much resembles the seed of turnips; but the stalk and leaves are quite different. They employ likewise the varagon, another fruit, which they prefer to the kevaron. They pound about two handfuls, which they afterwards boil in water, and pour this water into the vessel, where the iron and its scorizæ are. They add the bigness of two or three nutmegs of the native sugar of the palm tree, taking care not to put more, otherwise the colour would not last long, and would be effac'd by washing. The fifth is, That to make the colour finer, they join to the callou the kevaron, or prepar'd varagon, as we have said. The sixth and  
last

last observation is, That this tincture would not appear very black, nor hold upon a stuff that was not prepar'd by the cadou.

### III

After having designed and painted with black all the places that require this colour, they with red, design the flowers and other parts that must be finished with this colour. It must be observed they have now only drawn the outlines; for it is not proper to paint with red, since it is necessary previously to apply the blue, which requires several preparations.

They must first put the web in boiling water, and leave it for half an hour, and if they put with the stuff two or three cadous, the black will be more beautiful. In the second place, having dissolved sheeps and goats dung, in this water, they put the web in it to steep, and leave it a night, but must take it out the following day, and expose it to the sun.

When the Indian painters are asked what the design of this last operation is, they all agree, that it takes from the web that quality it received from the cadoucaie, which if it still preserved the blue which they afterwards put on, would become black.

Another reason makes this operation necessary, which is to render the stuff whiter; for we have mentioned before, that it was but bleached, when they begin to paint it. When they expose it to the sun they do not let it entirely dry; but pour water on it now and then for a day, after which they beat it on a stone on the edge of the river, but not with a beating staff as they do in Europe. The Indians fold it in several doubles, and beat

it strongly on a stone, in the same manner as locksmiths and farriers strike the iron on the anvil with their large hammers.

When the web is sufficiently beaten in a certain position, they beat it in another, tho' twenty or thirty strokes are sufficient for this operation, after which they dip the stuff in a canje of rice. The best method, if they had the materials, would be to take kevaron, pound it, put it on the fire with water, and before this water is inspissated, to dip the stuff, take it out immediately, let it dry, and beat it with the cattapoulli, as they did in the first operation.

As the blue is not painted with a pencil, but is applied by dipping the stuff in prepared indigo, there is a necessity of painting or covering the web with wax, generally every where, except the places where there is black, blue, or green. This wax is painted with an iron pencil, as slightly as possible on one side, taking care that no places are left without wax, except such as we have mentioned, otherwise there would be blue spots which could not be washed out. This being done, they expose to the sun the stuff waxed in this manner; but they must be careful, that the wax melt not, more than is necessary to penetrate to the other side. Then they quickly withdraw it, turn it, and rub the whole surface of it strongly with their hands. The better method would be to use a copper vessel with a round bottom, since by this means the wax would be diffused every where, even to the places of the other side, which are to be tinged with blue. This preparation being finished, the painter gives the web to the blue-dyer, who returns it in a few days; for it is to be observed, thaty the are not ordinary painters, but skilful workmen or particular dyers, who are employed for this purpose.

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Their indigo is thus prepared. They take the well dried leaves of *averei*, or indigo tree, and reduce them to powder which they put in a very large vessel full of water. They stir it strongly in the sun with a bamboo split in four parts, whose lower extremities are considerably distant from each other. They then let the water run through a small hole in the lower part of the vessel, at the bottom of which the indigo remains. They take it out, and divide it into pieces about the size of a pigeon's egg. They then spread ashes in a shade, on which they lay the web, and upon it dry the indigo.

After this nothing remains but to prepare it for those webs they design to colour. The workman, after having reduced to powder a certain quantity of indigo, puts it into a great earthen vessel, which he fills with cold water, adding a proportionable quantity of lime, reduced likewise to powder. Then he smells at the indigo, to know if it is sour; and in that case he adds still more lime, as much as is necessary to make it lose that scent. Then taking about a quarter of a bushel of the seeds of *tavarei*, he boils them in water for a day and a night, keeping the vessel full of water. After this he pours out the whole, water and seeds, into the vessel of the prepared indigo. This dye is kept for three days; and they must take great care to mix all well together, by stirring it four or five times a day with a stick. If the indigo should still have a sour flavour, they add a proportion of lime.

The blue being thus prepared, they dip the web in it, after having folded it double, in such a manner that the right side of the stuff may be tinged, while the wrong side is not touched, after which they let it steep about an hour and half, and then

then take it out tinged with blue in the proper places. One sees by this, that the Indian stuffs may be said to be dyed, as well as painted.

The length and multiplicity of all these operations to dye in blue, naturally excites a doubt, viz. Whether they ought rather to paint their blue flowers with a pencil, especially when there is little of this colour in the design. The Indians agree, that this might be done; but, they say, blue thus painted would not hold; and that after two or three washings it would disappear.

The tenacity, and adherence of the blue colour ought to be attributed to the seeds of *tavarei*, which grain grows in the East-Indies, tho' not every where; and it is of a clear olive colour, cylindrical, of the thickness of a line, and, as it were, cropt at each end. It is difficult to break it with the teeth; and tho' it is insipid, yet it leaves a little bitterness in the mouth.

#### V.

After the blue, the red must be painted; but they must first take the wax off the web, bleach it, and prepare it to receive this colour. The wax is taken off in the following manner.

They put the web in boiling water, by which the wax is melted, then diminishing the fire, that it may float on the surface more easily, they take it out with a spoon as carefully as possible; they make the water boil again, that they may obtain the remainder of the wax; and tho' it is become very dirty, yet it will still serve for the same purpose.

To bleach the web, they wash it in water, beat it nine or ten times upon a stone, and put it to steep in other water, wherein they have dissolved  
sheeps

sheaps dung. They wash it again, and expose it three days to the sun, taking care to throw a little water on it from time to time. They then dilute in cold water a kind of earth called ola, used by the bleachers; and in this water they leave the web for an hour. Then they kindle a fire under the vessel; and when the water begins to boil, they take out the web, to wash it in a pond, on the border of which they give it about four hundred strokes on a stone, and wring it strongly. Then they steep it for a day and a night in water, wherein they have dissolved a little cows dung, or that of a female buffalo. After this they take it out, wash it again in the pond, and unfold it to spread it half a day in the sun, and now and then throw a little water upon it. They then put it on the fire in a vessel full of water, and when the water has boiled a little, they take out the web to wash it again in the pond, beat it a little and dry it.

In a word, to make the stuff proper to receive and retain the red, they must reiterate the operation of the cadoucaie, as has been said in the beginning; that is to say, that they dip the web in the simple infusion of the cadoucaie, that they wash it, beat it on a stone, let it dry, after this steep it in buffaloes milk, then stir it, and rub it for some time with their hands; that when it is thoroughly impregnated with the liquor, they take it out, wring it, and dry it; that if there are red flowers to be made with white streaks and other designs, they paint these with wax, and then with an Indian pencil they lay on the red which they had prepared beforehand. Children commonly paint the red, because it is less painful, unless great accuracy is required.

We now proceed to the manner of preparing the red, Take sharp water, that is to say, water of par-

particular wells in which this taste is found. Into two pints of water, put two ounces of alum reduced to powder; add to it four ounces of red-wood named vertangen, or of the wood sapan, reduced likewise to powder. Expose all to the sun during two days, taking care that nothing sharp or salt fall into it: otherwise the colour would lose much of its strength. If they would have the red deeper, they add alum; and pour more water into the vessel, when they would have it fainter; by which means they make the red for the shadings and variations of this colour.

## VI.

In order to produce a colour resembling the lees of wine with a violet cast, we must take a part of the red before mentioned, and an equal part of the black, whose composition we before specified. They then add an equal quantity of canje, drawn from rice kept a month; and by this mixture the intended colour is produced. A ridiculous piece of superstition prevails among these people with regard to this sharp canje. He that has it must make use of it every day in the week; but on sundays, thursdays, and fridays, he must refuse it to others who want it. It would be, say they, to drive their god from their house, to give it on those days. Instead of this vinegar of canje, they may make use of the vinegar of callou, or the wine of the palm-tree.

## VII.

We may compose various colours of a reddish cast, about which we need not at present give any directions, only it is to be observed, that they must be laid on at the same time, with the deep red; that is to say, before we proceed to the  
ope-

operations of which we shall speak, after we have made some observations upon what precedes.

First, these wells, whose water is acrimonious, are not common in the Indies, since frequently there is not one of them to be found in a whole city. 2dly, This species of water, according to some trials the Europeans have made, has not the taste the Indians attribute to it, tho' it seems to be worse than ordinary water. 3dly, They prefer this water to any other, that the red may be more beautiful according to the opinion of some, and according to others there is a necessity of using it, because the red would not hold. 4thly, It is from Achen they import good alum, and good sapan to the Indies.

Whatever virtue this sharp water may have to render the red adherent, it would not sufficiently hold nor be beautiful, if they did not mix with it the tincture of imbourre. This is what they commonly call *chaiaver*, or root of *chaia*. But before they use it, they must prepare the web, by washing it in the pond in the morning, plunging it several times, that it may imbibe the water, which they have principally in view, and which is not done soon, on account of the unctuousity of the buffaloes milk, in which they had before dipped the web, after which they give it about thirty blows on a stone, and then half dry it.

While they use this method with the web, they must likewise prepare the root of *chaia*, which is done in this manner: take a proper quantity of this root well dried, reduce it to a fine powder, by pounding it in a stone, and not wooden, mortar, which is expressly recommended: and now and then throw into it a little of this acid water. Take about three pounds of this powder, and put them into two measures of common water warm-  
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ed a little, and take care to agitate the whole. Tho' this water becomes red, yet it only gives the web a faint colour ; so that it is never used, except to give the last perfection to the other red colours.

For this purpose they must dip the web into this dye ; and that it may take the colour well, agitate and turn it every way for half an hour, while they augment the fire under the vessel. When the hand can no longer support the heat of the dye, those who would have their work compleat, take out the web to wring it, and dry it well, which they do for this reason ; when they paint the red, some drops of it must necessarily fall where they should not be ; and tho' the painter is as careful to wipe them off with his finger, as we do when ink falls upon the paper on which we write, yet some stains of the chaia are always to be seen. In order to prevent this, they withdraw the web, and dry it ; and the workman looks for the spots, and takes them out as well as he can with lemon juice.

The spots being taken out, they put the web again into the dye, and augment the fire, till the hand can no longer endure the heat ; then they take care to turn it over and over for half an hour ; and towards the evening augmenting the fire, they make the dye boil for an hour or thereabouts. Then they put out the fire ; and when the dye is tepid, they take out the stuff, which they wring thoroughly, and keep it moist till the next day.

Before we proceed to consider other colours, it is proper to say something of the chaia. This plant grows wild, tho' it is also sown, on account of the absolute necessity they have for it. It rises no higher above ground than half a foot, has leaves of a bright green, about two lines broad, and about five or six long. The flower is very small,  
and

and blueish, and the seed is not larger than that of tobacco. This little plant sometimes sends a root four feet deep into the earth, but this species is not the best, since it is far inferior to that whose root is only a foot, or a foot and a half long. This root is very small, tho' it runs deep into the earth, and it neither shoots to the right or left, but very few and very small filaments. It is yellow when fresh, and becomes brown when dry. It is only when it is dried, that it gives a red colour to water, on which they have made a particular experiment. A workman had steeped some of this root in water, which was become red. During the night-time an accident had spilt this liquor; but he was much surprized to find on the next day, at the bottom of the vessel, some drops of a yellowish colour. This circumstance, no doubt, proceeded from his using the best species of the chaia. In a word, when the workmen reduce this root to powder, by pouring in a little water, as has been said, it generally assumes a saffron colour. We must observe, that round this vessel, which was thrown down, there was fixed a pellicule of a beautiful violet colour. This plant is sold in dry parcels; they cut off the top, where the dried leaves are, and use only the roots for this dye.

As the web has been dipped intirely in this dye, and consequently tinged with the colour, it may be taken out without any fear of its sustaining the smallest loss by the following operations, which are the same with these mentioned before; that is to say, we must wash the stuff in a pool, beat it ten or twelve times on a stone, bleach it with sheeps treadles, and the third day soap, beat, and dry it, throwing a little water on it, now and then, leave it moist for a night, wash it next day, and dry

dry it in the evening. Lastly, about noon they wash it in warm water, to take the soap and dirt from it, and then dry it thoroughly.

## VIII.

The green which they paint on the stuffs requires likewise due preparations. Take a palam, or a little more than an ounce of the flower of cadou, an equal quantity of cadou, a handful of chiaver, and if you would have the green finer, add the bark of a pomgranate. After having reduc'd these ingredients to powder, put them into three bottles of water, which you must boil to three-fourths : pour out this tincture into a vessel, passing it through a linen cloth. To a bottle of this tincture, put half an ounce of alum in powder; shake sometimes the vessel, and the colour will be prepar'd.

If you paint with this colour on blue, a green will be produc'd ; wherefore when the workman has painted his stuff blue, he takes care not to paint with wax the places where he designs to paint green, to the end that the stuff already painted blue may be in a condition of receiving the green in proper time. It is so necessary to paint upon the blue, that they would have but a yellowish colour, if they painted on white stuff.

But it is to be observ'd, that the green does not last like the blue and the red ; so that having washed the stuff four or five times, it disappears, and nothing remains but the blue, upon which they had painted it. There is notwithstanding a way of fixing this colour ; so that it will last as long as the stuff, which is done in the following manner : Take the onion of a banana tree, bruise it fresh, and extract the juice. To a bottle of  
green

green tincture put four or five spoonfuls of this juice, and the green will become adherent and indelible, tho' this juice makes the green lose a part of its beauty.

## IX.

We shall now speak of the yellow, which requires no long explication, since the colour which serves for green in painting on blue, serves also for yellow in painting on white stuff. But this colour is not very lasting, and disappears after having been wash'd a certain number of times; yet when they content themselves with, soaping lightly these stuffs, wash them in sour whey mix'd with the juice of lemon, or steep them in water, wherein they have put a little cow's dung, which they have strain'd through a cloth, these fading colours last much longer.

## X.

The Indian pencils are nothing else but a little piece of bamboo-wood, sharpen'd and split about an inch at the point. To this they fix a small piece of stuff dipp'd in the colour, which they want to paint, pressing it with their fingers, in order to squeeze it out. That which they use for painting on wax is of iron, three fingers breadth, or a little more in length, and small at the top, which is inserted in a little bit of wood, which serves as a handle to it. It is split at the end, and forms a circle in the middle, round which they fix a quantity of hair as large as a nutmeg, and these hairs absorb the warm wax, which gradually flows from the extremity of this kind of pencil.

## C H A P. XXVI.

*Discovery of a new synagogue ; of the Jews at Caifomfou, the capital of the province of Honan, in China.*

**T**HE most remarkable things in this newly discovered synagogue, are the inscriptions of the ancient Jews, some of which are in Chinese, and others in their own language. They readily shew their kints, or books of religion, and even let persons enter into the most secret places of their synagogue, where it is not permitted themselves to enter. This is a place reserv'd for their cham-kia, that is to say, the head of the synagogue, who never enters without a profound respect.

Upon certain tables there are thirteen kinds of tabernacles, each of which is surrounded with little curtains. The holy kint, or the pentateuch of Moses, is contain'd in each of these tabernacles, twelve of which represent the twelve tribes of Israel, and the thirteenth Moses. These books are written upon long parchments, in a fair and clear character, and rolled on sticks. One of these books was happily saved from the great inundation of the river Hoambo, one of the greatest rivers of China, which overflowed the city of Caifomfou, capital of the province of Honan. As the letters of this book have been wet, and are almost effac'd, these Jews have taken twelve copies, which they preserve carefully in the twelve tabernacles before-mention'd.

In two other places of this synagogue, there are several old coffers, wherein they preserve with care

a great number of little books, into which they have divided the pentateuch of Moses, which they call takien, with other books of their law. At their prayers they use these books ; some of which are written in Hebrew ; some are new, some old, and half torn ; but the whole are preserv'd with more care than if they were gold or silver. There is in the midst of their synagogue a magnificent high chair, with a beautiful embroider'd cushion. This is the chair of Moses, on which on sabbaths, or the most solemn days, they place the pentateuch and read it. One finds there likewise a vancripai, or a picture on which the emperor's name is written, but there are neither statues nor images. Their synagogue fronts the west, and when they pray to God, they turn their faces to that quarter; and worship him under the names of Tien, Cham-tien, Cham-ti, Teovanvoetcher ; all which signify the governor of the universe. They have taken these names from Chinese writings, and make use of them to express the supreme being, or first cause.

In coming from the synagogue there is a hall, where one sees a great number of perfume-vessels, and this is the place where they honour their chingins, or the great men of their law. The largest of these vessels, which is consecrated to the patriarch Abraham, the head of their law, is placed in the midst of this hall. After it are placed those of Isaac, Jacob, and his twelve children, whom they call Chel-cumpaise, the twelve lineages or tribes of Israel ; then follow those of Moses, Aaron, Joshua, Esdras, and several illustrious personages, both men and women.

If we compare the names and chronology of Genesis, Exodus, Leviticus, Numbers, and Deuteronomy, which compose the pentateuch of Mo-

ses, we shall find that these books have an exact conformity with the pentateuch, which these Jews preserve with so much care, which they call beresith, veelesemoth, vaiiera, vaiedabber, and haddebarim. They divide them into fifty-three volumes; Genesis into twelve, Exodus into eleven, and the subsequent books into ten volumes each, which they call kim.

As for the other books of the bible, they have some of them, but want the others, and some they have no knowledge of. What seems astonishing is, that their ancient rabbins have mixed several ridiculous fables with the true facts of scripture, and this even in the five books of Moses; which gives room for suspicion, that these Jews may be Talmudists \*, who corrupt the sense of scripture.

These Jews, who are call'd in China Tiao-kin-kiao, whether they be Talmudists or not, observe several of the ceremonies of the old law, for example, circumcision, which they say began with Abraham; the feast of unleavened bread; the paschal lamb, in memory and thanksgiving for their deliverance from Ægypt, and their passage through the red sea; the sabbath likewise, and several other festivals of the Old Testament.

The first Jews that appear'd in China † came under the dynasty of the Hans, and at first there were several families of them, but their number

\* The Talmud is a book very much esteem'd by the Jews, because it contains their laws, their customs, and the pre-  
dications of their rabbins. Those who follow the doctrine of this  
book, are call'd Talmudists.

† Of the twenty-two families who have possessed the empire  
of China since the year 2697, before the birth of Christ, the  
family of Han is the fifth, and one of the most illustrious, since  
it has furnish'd twenty-five emperors to China, and govern'd  
that nation for 425 years, from the year 206, before the birth  
of Christ, till the year 220, after his birth.

ber being diminish'd, there remain at present only seven, who contract alliances with each other, without mixing with the idolaters, with whom they have nothing common, either in respect of books, or religious ceremonies; nay, even their mustachoes are turn'd in a different manner.

They have no synagogue, but in the capital of the province of Honan, where there is no altar but only the chair of Moses, with a perfume-vessel, a long table, and great candlesticks, with tallow candles. Their synagogue has some similitude to the European churches, and is divided into three isles, the middle one of which contains the table of perfumes, Moses's chair, and the van-feripai, or picture of the emperor, with the tabernacles, where they keep the thirteen copies of the kchia-kim, or pentateuch of Moses. These tabernacles are made like arches; and this isle in the middle serves for the choir of the synagogue. The two other isles are destin'd for prayer and adoration; and there is a beautiful walk round the whole inside of the synagogue.

There were formerly, and are now among them, batchelors, and kien-sens, who are a degree above the batchelors. All these learned Jews agree, that they should honour Confucius in the same manner as the other learned gentiles honour him, and assist with them in the solemn ceremonies that are perform'd in the halls of their grandees. In spring and autumn they pay their ancestors the honours usual in China, in the hall which is near their synagogue, tho' they do not indeed offer to them hogs-flesh, but that of other animals. In the common ceremonies they are content with presenting to them china vessels full of sweat-meats and preserves, which they accompany with profound bows and prostrations. In the hall of their



dead they have neither pictures nor images, but only some perfume-vessels ; yet we must except the mandarins, for whom only they put in the tsutam, or hall of their ancestors, a picture in which their name, and the degree of their mandarinship are mark'd.

These Jews in their inscriptions call their law the law of Israel, yselao-kiao : they say, that their ancestors came from a western kingdom, called the kingdom of Judah, which Joshua conquered after their departure from Egypt, and that the number of the Jews who came from Egypt was sixty vans, that is to say, six hundred thousand souls.

They speak of the books of Judges, David, Solomon, and Ezekiel, who animated the wither'd and dry bones of Jonas, who was three days in the whale's belly ; whence we may conclude, that beside the pentateuch, they have several other books of the scripture.

Their alphabet has twenty-seven letters, but commonly they only make use of twenty-two, which agrees with what St. Jerom says, that the Hebrews have twenty-two letters, five of which are double. They call their sect in Chinese tiao, kin-kiao, to signify that they abstain from blood, and that they cut the nerves and veins of the beasts they kill, that the blood may flow out more easily.

The gentiles first gave them this name, which they received very willingly, to distinguish themselves from idolaters, whom they call heemakiao. They call their law konkiao, the ancient law tien-kiao, the law of God, or the law of Israel. They light no fires, nor prepare any food on saturdays, but prepare on fridays all that is necessary for the sabbath. When they read the bible in their synagogue, they cover their faces with a transparent veil,

veil, in memory of Moses, who came down from the mountain with his face cover'd, and thus published the decalogue, and the law of God to his people.

Besides the bible, these Chinese Jews have other Hebrew books written by the ancient rabbins, which they call *fontes*, and which are full of extravagancies, and contain their rituals, and the ceremonies which they use at this day.

What is most certain is, first, that these Jews worship the creator of heaven and earth, whom they call *tien-chanti-chamtien*, as appears evidently by their ancient inscriptions. Secondly, that it is no less certain, that the learned Chinese Jews give to Confucius the honours which the other Chinese gentiles generally pay him. Thirdly, that it is sure that they honour the dead in the *tsutam*, or hall of their ancestors, with the same ceremonies us'd in China, but without pictures, which they do not use, because they are forbidden to have images, or any thing similar to them. Fourthly, that it is certain, that in their descriptions mention is made of their law, which they call the law of Israel; of their origin, antiquity, descent, and of their patriarchs, Abraham, Isaac, and Jacob; of the twelve tribes of Israel; of their law-giver Moses, Aaron, Joshua, and Esdras; of the *chim-kim*, or pentateuch, which they have received from Moses, and which is compos'd of the books of beresith, veelesemoth, vaiiera, vaiedabber, and of haddebarim, which when join'd together, they call *taura*, and St. Jerome *tora*.

Remarks on what has been said.

First, the synagogue which we have spoken of is very different from what we see in Europe, because it rather represents a temple than a common

**Jewish synagogue.** In a word, in the Chinese synagogue, the holy place, whither it is not permitted any but the high priest to enter, has a resemblance with the *sanctum sanctorum*, where was the ark of the covenant, and the rod of Moses and Aaron. The space that is separated represents the part where the priests and levites assembled in the temple of Jerusalem, and where the sacrifices were offer'd. In a word, the hall at the entrance where the people pray, and attend at all the ceremonies of religion, resembles what was formerly called the porch of Israel, *atrium Israelis*.

Secondly, the Hebrew inscriptions in the synagogue of China, shew, that the Jews there, in this point, retain the same custom which is observ'd in the European synagogues. But the inscriptions of the European Jews are but the initial letters of certain words, which compose one or more sentences.


Thirdly, as for the tabernacles or tents of Moses, and the twelve tribes, these are peculiar to the Jews of China, since no such things are found in the synagogues of Europe. On the east side there is a kind of coffer or chest, where they shut up the five books of the law.

Fourthly, the small books which the Chinese Jews preserve, are apparently the fifty-three sections of the pentateuch, which the European Jews read every saturday successively in their synagogues, and divide them so equally, that every year they read over the five books of Moses.

Fifthly, 'tis not surprizing that the Chinese Jews turn their faces to the west, when they pray, whereas the Europeans turn to the east. The reason of this difference is, that among the Jews it is a very ancient law to turn their face towards the holy city when they pray. Now, Jerusalem, situated indeed in regard of Europe to the east, in regard of China is  
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situated to the west. Besides, it is certain, that the temple of Jerusalem was disposed in such a manner, that the Israelites when praying turned towards the west, and the Chinese Jews follow, perhaps, the same custom.

6thly, It is not surprising that there is no altar in this synagogue; for as the Jews offer no more sacrifices, and are not permitted to sacrifice but at Jerusalem, an altar would be useless to them.

7thly, When we said, that the Hebrews had twenty-seven letters, we are to comprehend in this number the five final letters, of which St. Jerome speaks, which are not properly different characters; but a different manner of writing them, by lengthening the strokes at the end of words, instead of turning them in, as they do in the beginning and the middle, except the  which is entirely closed.

## C H A P. XXVII.

*A secret to make perfumes, and give the exhaling vapour an agreeable figure; to preserve fire on the water without being extinguished; to extract mercury from wild purslane; the secret of changing lead into pewter, and to give pewter the lustre of silver; means of restoring a compass without a loadstone; secret of the philosophers stone used in China.*

THE Chinese are great lovers of perfumes, of which they have all kinds, simple and compound, some found in their own country, and others imported from Arabia, and the Indies. Some-

Sometimes they make odoriferous cakes, and at other times sticks, composed of various scented powders, which they put in a vessel full of ashes; and these sticks having taken fire at one of the ends, exhale slowly a sweet and light vapour; and in proportion as they waste, the ashes fall into the vessel, without falling on the floor. As for other perfumes, such as incense, and odoriferous powders, they, like the Europeans, throw them on lighted charcoal.

A famous Chinese author observes, that in order to combine different kinds of perfumes, they must mix with them cotton, or burrs of mugwort, that the agreeable vapours of these odoriferous bodies may unite, and rise to a certain height in form of a pillar, without dissipating themselves in the ambient air. He would have almonds joined, or acid jujubes, after pounding them in a mortar. In this consists the secret, but at the same time he advises that what is called in China cotton, or burrs of mugwort, is nothing else but the fine moss which is found on old pines. They formerly taught, that a sovereign remedy for the gout was to kindle mugwort buds, and let them consume on the afflicted part. If those who have tried this remedy have not been relieved, their disappointment might have happened, because by the mugwort buds they did not understand, as the Chinese do, that fine moss with which old pines are covered in certain places.

The same author adds another secret, to give the vapours of the perfumes an agreeable figure, when it rises in the air. It is a custom in China to have large vessels in their gardens, wherein they cultivate the flowers of water-lily. When in June, this root sends out its large leaves, rub some of them with honey; a few days after there will be  
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formed a kind of little worms, which will eat all the green substance of the leaf, of which nothing but the filaments will remain, like gauze. These will be soon dried, and you must then gather it, and take off the pellicule; after this, you must reduce the gauze into fine powder, and when you would burn several sorts of perfumes in a vessel, and combine them together, add a little of this powder; by which means the vapour will unite in a body, rising pretty high, and terminating in a cloud, or in figures of various kinds.

The following secrets related by the same author, are an attempt to account, not only for the sepulchral and inextinguishable lamps used in the time of the first Roman emperors, but also for that species of fire, known by the name of *ignis fatuus*. He directs us how to make a ball, which being lighted, floats on the water without being extinguished. Compose it, says he, of *tehangrao*, that is to say, Chinese camphor, which is not very dear, and which being purified and crystallized, yields, tho' in a smaller quantity, a camphor as good as that of Borneo. Take then a dram of camphor, add to it half a dram of the resin of pine, mix them with good brandy, kindle this mass, and place it immediately on the water, and it will burn slowly, and not extinguish, until it be entirely consumed.

To have a lamp that will last, and give light for a month, gather in the month of July an ounce of the herb *feon-ping*, which grows on the surface of the water in lakes, on the banks of slow running rivers, and which is called the ever-green. To this add a quantity of *quen-tem*, or the small claws of *ko-fuen*, a kind of shell-fish, and of *hoang-ban*: reduce all to a fine powder, and to an ounce of oil add a dram of the powder thus prepared.

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Another Chinese writer teaches us how to make candle which will last the whole night, and during that time consume but an inch or two fingers breadth. The chief ingredients are yellow wax, resin of the pine tree, flowers of the Egyptian thorn, of each an ounce and six drams. To this add a dram of seouche, which is a light porous stone. They then melt the resin and the wax, and afterwards add the flowers of Egyptian thorn, and the stone of seouche. They incorporate these substances, in which they carefully dip the wick, in order to make this candle.

If they should use the dry varnish, resin, fine saltpetre, sulphur, and incense, reduced to a powder, and then of this varnish compose little balls of the size of a pea, lay one of these balls on a plate of iron, light it at night, and tho' exposed to the highest wind, it will not be extinguished till the next morning.

The following secret is still more surprizing, and the experiment is not difficult. Without regard to those advantages that may be drawn from it, curiosity might incline one to the experiment. There is a method, says the Chinese author, of drawing mercury from wild purslane. For this purpose you need only take the little leaves of purslane, bruise them in a mortar with a pestle of the wood of Egyptian thorn; then expose them to the rising sun for about three days, and when they are dry, toast them so as not to destroy their nature and virtues; put this mass in a well varnished earthen vessel, which you must close well, and bury in the earth forty-nine days; after which take out the vessel, and you find quick-silver in perfection.

Nothing is more certain than this secret; and in the shops of Peking they sell two sorts of mercury;

the one taken from mines, which is called chanchoueir ; and the other obtained from plants, which is called tsao-chonien.

These different operations of the Chinese discover to us, that in the principles of plants there is iron, which may induce us to think, that there may be mercury in certain plants ; and if we reflect on the nature of plants, and search for that which most probably contains quick-silver, we have reason to believe that purslane does so ; for, in short, the Chinese herbalist, who in this agrees with the greatest botanists of Europe, gives to purslane the virtues that are found in mercury. The purslane, says he, is cold in its nature, kills worms, and all sorts of vermin, is usefully employed against noxious humours, which it dissipates ; and because in its nature it is volatile, it removes obstructions in the vessels of the human body.

Be this as it will, it is very probable, that quick-silver drawn from plants by the solution and separation of their principles, would be free from several impurities which naturally attend that obtained from mines ; for by being exalted into the minutest parts of the plants, it must be freed from the ramous and sulphureous fibres, with which it abounds more or less, and from which it is separated, by passing it thorough a sheep's skin.

Should this receipt, by experience, be found true, we may reap from it a double advantage ; the first of which is, that every where, and in a short time, we may procure a sufficient quantity of mercury. The second, and most considerable is, that by the quick-silver extracted from purslane, we may judge better of the different uses of this plant, and may determine more certainly for what time, and with what precautions it may be used, according to the different situations of persons, whether in health or sickness. Besides,  
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its juice prepared in a certain manner might act upon metals disposed to receive it.

The following secrets will still farther shew the action of the juice of plants, when mixed with metals in fusion. A Chinese author says, that melted lead, boiled with the juice expressed from fumitory with yellow leaves, will be changed into sila; which is a Chinese tin, much more beautiful than that of Europe.

This receipt, in conjunction with the following, may perfect those proofs we chuse to make. We find in another Chinese book, that there is a possibility of giving a tin vessel the hardness of iron, and the brightness of silver, by holding it over the fire in chang-ka, which is only steel-slings, and in pepi, which is arsenic and salt.

Another author pretends, that by rubbing Chinese tin with a fine powder, composed of tan-fan, which is copperas, and in two drams of pefan, which is alum, the tin assumes the colour of gold; and that if they rub iron with this mixture, it will become red. Perhaps the manner in which the Chinese prepare iron for gilding it, renders it softer, and consequently more proper to be impregnated by copperas and alum. Their method is as follows.

They mix a spoonful of the juice of tsung, which is onion and leek, as much sour rice, three heads of pounded garlic, and five drams of dog's grease. They put the iron into water with this mixture, which they boil, till they perceive the iron has taken a pale whitish colour.

What the same author relates of the manner of restoring the virtue of the mariner's compass, that it may turn to the poles, will appear, no doubt, very extraordinary. They have not recourse, as we, to the load stone, tho' China is abundantly pro-

provided with them; and its other virtues, as well as attracting iron, are well known to them, since they give it the name of *hibieche*, or the stone which attracts iron. The knowledge of its qualities has given rise to a story told of a lake, where they dare not expose vessels, because there is, say they, at the bottom of this lake, such a quantity of load-stone, that all the iron-work which holds together the vessels, being violently drawn to the bottom, the vessel must fall to pieces. Hence also proceeds the ridiculous opinion of the Chinese physicians, that by putting the powder of a load-stone in a plaister, it will draw out the splinters of iron remaining in a wound.

But, in a word, if the Chinese do not employ the load-stone to restore the virtue of the needle, we must satisfy the reader, by acquainting him in what manner they do it.

Take, say they, in the first place, some *tchucha*, the true cinnabar, which is very scarce in Europe; and in the second place *hiun-hoang*, which is orpiment, a certain species of which is called *tse-loang-tse*, which is the female, and is the dearest, and the other *hoang-hiung*, that is to say, male. This, perhaps, is the realgal, or the yellow sandars, inclining to red. To the cinnabar and orpiment add steel filings, reduce an equal weight of these ingredients to a fine powder, which you must mix well together with the blood extracted from white cocks combs; after which you must take twenty or thirty fine needles, which you must cover on all sides with this mixture; and after having wrapped them up in paper, you must keep them seven days and seven nights in a little furnace, under which you must constantly keep a clear fire of charcoal. After this operation, cover the needles, and carry them with you three days applied close to your skin. Then make trial of

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your needles, and you will find that they will turn exactly to the poles, and will be very proper for mariners compasses.

We must acknowledge, that the ingredients which compose this receipt seem to have no connection with the just direction of the needles to the pole.

In the first place we must for some time put these needles over a clear fire; and it is certain that the best load-stone, and the best touched needle, lose their strength and virtue by the action of fire. In the second place, the mixture with which they cover these needles, is composed of minerals, which are no ways proper to communicate the quality given by the load-stone; sulphur, quick-silver, and arsenic predominate. If there is a mixture of iron, it is in powder, and has no longer the arrangement of its parts, and its pores proper to communicate the magnetic virtue. In a word, the sulphureous and pinguious parts of the blood of cocks, which unite the ingredients, and the fuliginous perspiration of the human body, which is recommended in the receipt, obstruct the strongest operation of the load-stone.

Besides, we might be surprized, if upon making tryal of this receipt, we should find that a needle thus prepared for the compass was less susceptible of the declinations and variations, which are found in needles touched by the load-stone, and which so much perplex mariners. It seems the Chinese know nothing of these variations, or at least make no mention of them.

The chimerical secret of the philosopher's stone has been in vogue among the Chinese, long before we had any notion of it in Europe. They speak magnificently in their books of the seed of gold, and of the powder of projection; and what our quacks

quacks call the great work, they call the *lien-tan*, and promise to draw from crucibles, not only gold, but also a specific universal remedy, which procures to those who take it a kind of immortality.

What is still more surprising, in these books, the Chinese pretend that the depositaries of so valuable a secret, how skilful soever they be, and whatever expence they are at, run a risk of failing in their enterprize, if they are not possessed of such a superlative degree of virtue, as merits the benedictions of heaven on such important and delicate operations.

But if some foolish alchymists, infatuated with this chimera, have not been undeceived till they have converted their substance into charcoal, there are others, who by their deceitful promises have allured the unthinking herd, and enriched themselves at the expence of their credulity, of which the following is a remarkable instance.

One of these quacks, who pretended to be one of the first masters of the art, affected on all occasions a great air of probity, and especially, such a degree of benevolence as may be supposed in a man who can convert the viler metals into gold. He found means, at length, to get acquainted with a rich nobleman, who after having born the chief employments of the state, had retired into the country. He insinuated himself subtly into his house; and by little and little he understood so well how to manage his humour, by his complaisance and affability, that he entirely gained his confidence. Then in several conversations dropping certain expressions of his great skill in the transmutation of metals, the curiosity of the mandarin was greatly excited; upon which the impostor acknowledged to him, that he had found the secret of the

philosopher's stone, and offered to communicate to him this secret, merely out of complaisance for his civilities, and the singular marks he had received of his kindness.

This credulous lord fell into the snare, and was so infatuated with alchymy, that he was impatient to see the operation begun. He disregarded the expence, being persuaded he should find in his house an inexhaustable mine of gold, and what flattered him the most, an infallible method of prolonging his days.

The alchymist did not need much importunity, but chose in the spacious palace of this old nobleman, a commodious, agreeable apartment, where nothing was spared in treating him, with his pretended wife and domestics : for this woman was not his wife, but a courtesan of extraordinary beauty, whom he had taken as copartner in his quackery, and who was to play the chief part of the farce.

As soon as he was prepared to begin, the alchymist received large sums to buy the valuable ingredients he was to put into the crucible, which he artfully converted to his own use. What still more imposed upon this old man, was to see the care which this impostor seemingly took, to assure himself of the protection of heaven. He made frequent prostrations, burnt a great quantity of perfumes, and continually exhorted the mandarin not to come into the laboratory without great preceding purification, because the least mental stain would ruin the labour of many days. The lady, at times, and as it were by chance, shewed herself; but with no visible design of exposing her charms.

The work went on; and at the end of a certain time, the alchymist shewed the credulous

lord such happy transmutations, as promised a short passage to the perfection of the grand work. This was to the deluded mandarin a subject of great joy, which was soon disturbed by the news which this quack received of the death of his mother. He was too good a son, and too exact an observer of the religious ceremonies of the empire, not to go immediately and pay her the last duties. He notwithstanding comforted the mandarin, by assuring him that he would return in a few days, adding, that the work would not be interrupted, because he would leave his wife and some domesticks, who knew enough for what remained to be done. The pretended wife seemed so thunder-struck at this abrupt separation, that her tears and cries proved the desire she had of following her husband, and partaking with him the duties of filial piety.

During the alchymist's absence, the old man often visited the laboratory, while the lady acted in character, and omitted nothing that might inspire him with love. She succeeded beyond her expectation; for the old man was soon captivated with her charms. His visits to the laboratory became more frequent, and his discourses longer and more secret. The servants perceived it; and it was the intention of the lady that nothing should escape their knowledge, because in the end they were to be witnesses.

In the mean time the alchymist returns, and certain signs the virtuous lady gave him, immediately inform him of what had passed. After having received from the mandarin the usual compliments on his quick return, he goes to visit the work, finds all in disorder, certain and evident signs, cried he, that the laboratory was defiled: and becoming in appearance mad, he overthrew crucibles, and furnaces, and wanted to kill both wife and

servants. The lady throws herself at his feet, asks pardon with tears, and acknowledges she had been seduced, and the domestics, with tears in their eyes, curse the day they entered into such an abominable house.

The alchymist, more furious than ever, roars, and swears he is going to complain to the magistrates, and demand justice of the mandarin who has dishonoured him. In China, adultery is a crime worthy of death, and capable of ruining the most opulent houses. The unhappy old man, seized with fear, and endeavouring to avoid the shame of punishment, as well as the loss of his estate, does all in his power to soften the mind of the furious alchymist. He offers him considerable sums of gold and silver ; and to repair the honour of so chaste a lady, he loads her with jewels and trinkets of all kinds. The alchymist and the lady not yielding without difficulty, at last promised not to push the affair farther, and retired overjoyed for having thus succeeded in finding the philosopher's stone.

## C H A P. XXVIII.

*The different languages of the Hurons, of the Abnakis, the Algonkins, the Illinese, the Outaouacks, and several other nations of New-France ; their employments, dresses, and dexterity in shooting with the bow ; their tenderness for their children ; ceremonies of their funerals ; cruel manner of treating captives of war.*

**T**HE language of the Hurons is the chief language of the savages of Canada ; and when a person is master of it, he can, in less than three months, make himself understood by five Iroquese nations. It is the most majestic, and most difficult of all the languages of the savages. This difficulty does not only arise from their guttural letters, but more from the diversity of accents ; for often two words composed of the same characters have quite different significations.

Every savage nation has its particular tongue ; thus the Abnakis, the Hurons, the Iroquese, the Algonkins, the Illinese, the Miamis have each their language, but have no books to instruct them, since custom alone is their guide.

The Abnakis inhabit a forest, which is but three leagues from Quebec. Their cottages are ranged much like houses in villages, and an inclosure of high poles or stakes, that are very close, form a kind of wall, which defends them from the incursions of their enemies.

Their huts are soon reared ; for they plant poles that join above, and cover them with thick



barks of trees. The fire is made in the midst of their hut, and they lay round it mats of bulrush, on which they sit in the day-time, and rest at night.

The mens dress consists in a frock made of a skin, or a piece of red or blue stuff; and that of the women is a covering, which falls from the neck to the mid-leg; and serves them as a robe; their stockings go from the knee to the ankle; and a sort of pumps of elk-skin lined with hair or wool, serve them instead of shoes. This kind of shoe is absolutely necessary for them, to join their feet to the rackets, by means of which they pass easily over the snow, and these rackets made lozenge-wise, are more than two feet long, and a foot and a half broad.

The invention of these rackets is of great use to them, not only to walk over deep snow, with which the earth is covered a great part of the year, but likewise in hunting wild beasts, especially the orignal, an animal which is larger than the largest oxen in Europe, and consequently walks with difficulty on the snow; so that it is no hard matter for the savages to catch it, and often with a common knife fixed to the end of a stick they kill it, live on its flesh, and after tanning its skin, in which they are skilful, they trade with the English and French, who give them in exchange cloaths, coverlets, cloaks, guns, axes, and knives.

In order to form some idea of these savages, we must represent to ourselves tall, active men, of an olive hue, without beards, with black hair, and with teeth whiter than ivory. They have no ornaments but a sort of beads, composed of a kind of shells or stones, which they form into small globules, some white, and others black, which they string in such a manner, as to represent figures no less regular than beautiful. With these  
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the savages tie their hair above their ears, and behind. They also make ear-rings, necklaces, garters, and large girdles of them.

The employment of the men is hunting or war, and that of the women to remain in the villages, and make panniers of bark, sacks, boxes, spoons, and plates. They sew these barks with roots, and make several well-wrought moveables of them. Their canoes are also one entire piece of bark, but the largest of them cannot contain above six or seven persons.

It is in these canoes, which are hardly thicker than a crown-piece, that they pass arms of the sea, sail on the most dangerous rivers, and on lakes of four or five hundred leagues circumference.

Nothing can equal the tenderness which the savage women have for their children, since as soon as they are born they lay them on a board, covered with a kind of stuff, and a little bear skin, in which they wrap them; and this is their cradle. The mothers carry them on their backs, in a manner commodious for their children, and easy to themselves.

The boys scarce begin to walk, but they are accustomed to the bow, and become so dextrous that at the age of ten or twelve years, they seldom fail of killing the bird they shoot at.

Nothing can be more disagreeable than their manner of eating; for after filling their kettle with meat, they boil it at most three quarters of an hour; when taking it off the fire, they serve it up in vessels of bark, and divide it among those that are in the cottage, who eat it as we do bread.

They are excessively fond of tobacco, since men, women, and girls, smook almost continually. In the beginning of June they sow Indian corn in the following manner. They make with the finger,

or a small stick, several holes in the ground, and throw into each eight or nine seeds, which they cover with the earth they take out, and their harvest is toward the end of August.

The Misilimakinaks are distant from Quebec about four hundred leagues, and attribute to their nation an original as foolish as ridiculous; for they pretend to descend from three families, and that each family is composed of five hundred persons.

Some are said to be of the family of Michabon, that is to say, the great hare; and they pretend that this great hare was a man of prodigious size; that he laid nets in the sea at eighteen fathoms deep; and that the sea scarce reached his armpits; that one day during the deluge he sent the beaver to discover the earth; but that this animal not returning, he sent out the otter, who brought back a little earth covered with froth; that he went to the lake where this earth was found, which formed a little island; that he walked in the water round about, and that this island became extremely great; wherefore they attribute to him the creation of the earth, and say, that after he had finish'd this work, he ascended to heaven; but that before he left the earth, he ordered that when his descendants came to die, they should burn their bodies, and scatter their ashes in the air, that they might more easily be conveyed into heaven; that if they neglected this, snow would certainly cover the face of the earth; that their lakes and rivers would remain frozen, and not being able to catch any fish, which is their customary food, they should all die in the spring.

The second family of the Outaouaks pretend they sprung from Mancipik, that is from the carpe, and say, that this carpe having spawn'd on

the bank of a river, and the sun darting his rays upon it, there arose a woman, from whom they are descended, for which reason they call themselves of the family of the carpe.

The third family attributes its origin to the paw of a machova, or bear, and call themselves of the bears family, without explaining how they proceed from it. When they kill any of these animals, they make him a feast of his own flesh, speak to him familiarly, and make harangues to him. Be not angry with us, say they, because we have killed thee ; thou hast sense, thou know'st our children are pinch'd with hunger ; they love thee, they design thee for their food ; and is it not glorious for thee to be thus eaten by the children of a captain.

There is none but the family of the great hare who burn the dead ; for the two other families inter them. When some captain is deceas'd, they prepare a large coffin, wherein laying his body clothed in his best cloaths, they inclose with him his coverlet, his gun, his provision of lead and powder, his bow, arrows, kettle, dish, victuals, pike, tinder-box, vermilion-box, looking-glass, his porcelain necklace, and all the usual presents made at a funeral, because they imagine, that with this equipage he will more successfully make his journey into the other world, and will be better received by the great captains of the nation, who will carry him with them into a region of pleasure.

While all is packing up in the coffin, the relations of the dead assist at the ceremony, by lamenting in their manner ; that is to say, by singing with a plaintive voice, and beating with sticks in concert, to which they fix several little bells.

The superstition of these nations appears still  
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more extravagant from the worship which they pay to him, whom they call their manitou. As they have but little acquaintance, except with the beasts they find in the forests, they imagine in them, or rather in their skins, or plumage, a kind of genius, which governs all things, and is the master of life and death. There are, as they say, manitous common to all nations; and there are particular ones for each person. Oussakita is, they say, the great manitou of all the beasts that tread on the earth, or fly in the air, in consequence of which, when they go a hunting, they offer tobacco to him, powder and lead, and prepared skins, which they tie to a pole, and raise it in the air. Oussakita, say they, we offer thee provision for smoaking, arms for killing beasts, vouchsafe to accept these presents, and suffer none to escape our arrows; grant that we may kill a great number of the fattest, that our children may want neither cloaths nor food.

They call Michibiehi the manitou of water and fish; and they make a sacrifice to him almost in the same manner when they go a fishing, or undertake a voyage. This sacrifice consists in throwing tobacco into the water, victuals, and kettles, begging of him that the water of the river may flow more gently, and that the rocks may not shatter their canoes; but that they may make copious draughts of the largest and best fish.

Besides these common manitous, each has his own, which is either a bear, a beaver, a bustard, or some such beast, or fowl, whose skin they carry in war, in hunting, and in their journeys, persuading themselves it will preserve them from all dangers, and make them succeed in all enterprises.

When a savage wants a manitou, the first animal which occurs to his imagination in sleep, is

commonly the object of his choice, so that he kills a beast of this kind, puts its skin, or plumage, if it is a bird, in the most honourable place of his cottage, and prepares a feast in honour of it, during which he makes his harangue to it in the most respectful terms, and then it is acknowledged for his manitou.

The Illinese are near eight hundred leagues distant from Quebec, and these savages who are only cover'd about the middle, have the rest of their body naked. Several groups of all sorts of figures, which they engrave on their bodies in an indelible manner, serve them instead of garments, and they adorn their heads with feathers of several colours of which they make garlands and crowns, which they adjust very well, and take special care to paint their countenance with different colours, and particularly that of vermilion. They wear necklaces and ear-rings made of little stones, which they cut in the form of jewels, of which some are blue, some red, and others white as alabaster, to which they add an ornament of porcelain, and then the collar is finish'd,

When the Illinese are not employed in war or hunting, they pass their time in gaming, feasting and dancing; of the last of which they have two kinds, since the one is the sign of rejoicing, to which they invite married women, and young ladies of the first distinction, whereas the other kind is intended to shew their sorrow for the death of the most considerable of their nation. It is by these dances that they pretend to honour the dead, and dry up the tears of his relations; and all the natives have a right to bewail the death of their neighbours and friends in this manner. The dances last longer or shorter, in proportion to the price and value of the presents: after which they distribute them among the dancers. Their custom is not to inter the dead, but to fold them up in skins,  
and

and tye them by the head and heels to the boughs of trees.

At the times when there are neither games, festivals, nor dances, the men continue quiet on their mats, and pass their time either in sleeping, making bows, arrows, and other things of a similar nature, while in the mean time the women work from morning to night like slaves ; since it is their business to till the ground, sow the Indian corn in summer, and as soon as winter comes to make mats, tan skins, and employ themselves in many other such like works.

Of all the people of Canada, there is none that lives in such plenty of all things as the Illinese, since their rivers are cover'd with swans, bustards, ducks, teal, &c. One can scarce travel a league without meeting a prodigious number of Indian turkey-cocks, which appear in flocks, sometimes to the number of two hundred, and some of which weigh thirty-six pounds.

In this country are great numbers of bears and stags, together with an incredible quantity of oxen and roebucks. We may see in meadows, in which the sight is lost, four or five thousand black cattle feeding together, each of which has a protuberance on his back, and a very large head. Their hair, except that on their head, is curled, and soft like wool, and their flesh is naturally saltish, and so light, that it may be eaten raw, without causing any indigestion. When they have killed an ox, that appears to them too lean, they are content with taking out the tongue, and look out for a fatter.

Their arrows are the chief weapons they make use of in hunting and war, which are pointed with a sharp stone cut into the form of a serpent's tongue, and which, for want of knives, they use to cut up the animal they kill. They are so dexterous

terous in shooting with the bow, that they scarce ever miss the mark, and do this so quickly, that they can sooner shoot a hundred arrows than an European load his gun.

They take little pains in making nets, because the variety of wild beasts, which they find for their subsistence, makes them indifferent about fish. Yet when they take a fancy for fish, they set out in a canoe with their bows and arrows, stand upright, the better to see the fish; and as soon as they see them, pierce them with an arrow.

The only means of procuring esteem among the Illinese, as among all other savages, is to gain the reputation of a skilful huntsman, and a good warrior. They are so fond of this character, that they undertake journies of four hundred leagues in the midst of forests, to make a slave, or to bring back the hair of a man whom they have killed, and despise the great fatigues and hardships they sometimes suffer, especially when they approach an enemy's country, lest the beasts being only wounded, should escape with the arrows in their bodies, and put the enemies on their guard; for their manner of making war, as well as that of all other savages, is to surprize an enemy; wherefore they send spies to observe their number, march, or to examine whether they are on their guard, and according to their informations, they either lie in ambuscade, or rush into their cottages with their poles in their hands, and never fail to kill some of the enemy before they are prepar'd for defence.

Their pole is made of a stag's horn, or wood, in form of a cutlass, ending in a large knob. They hold this pole in one hand, and a knife in the other; and as soon as they have discharg'd the blow on the head of an enemy, they scalp him,  
and



and take off the skin and hair with a surprising quickness.

When a savage returns into his country with a number of these hairy skins, he is received with extraordinary honours ; but the highest point of glory is to take many prisoners, and bring them home alive ; upon which occasion, as soon as he arrives, all the village assemble, and stand in ranks, where the prisoners are to pass. This reception is very cruel, since some pull off their nails, others cut off their fingers or ears, and some beat them unmercifully with sticks.

After this first reception, the elders assemble to deliberate, whether they shall grant their prisoners life, or put them to death. When some dead person is to be rais'd to life, that is to say, if any one of their warriors has been kill'd, and they think they should replace him in his cottage, they put into this cottage one of the prisoners who holds the place of the dead person ; and this is what they call raising the dead.

When a prisoner is condemn'd to death, they immediately fix a great stake in the ground, to which they tie his hands, and then make him sing his death song ; and all the savages sitting round this gibbet, light a few paces off a great fire, wherein they heat axes, and other iron instruments, red hot ; then they come successively, and apply them thus heated to different parts of his body, but others burn their captives with live coals ; some mangle and cut their bodies with knives ; others cut off a part of their burnt flesh, and eat it in their sight ; some make wounds and fill them with gun-powder, and then set fire to it : in a word, each one torments the poor wretch according to his fancy, and that for five or six hours, and sometimes for two or three days. The more  
piercing

piercing and violent the cries of the captives are, the more agreeable and diverting the spectacle is to these inhuman savages. The Iroquese invented this kind of death ; and it is only by way of retaliation, that the Illinese in their turn treat their prisoners with equal cruelty.

## C H A P. XXIX.

*Of nitre, sal-armoniac ; of the stones and marbles of Egypt ; of the chicken-oven ; of the eagle-stones ; and of the petrification of wood.*

THE natron, or Egyptian nitre, is produc'd in two lakes, one of which, call'd the great lake, is in length four or five leagues, and about one in breadth, and lies in the desert of Scitia or Nitria. It is a good day's journey to the west of the Nile, and two from Memphis, towards Cairo, and as far from Naucratis, towards Alexandria and the sea.

The other lake, call'd in the Arabian tongue Nebidee, is three leagues and a half in length, and about one and a half broad. It extends to the foot of the mountain on the west, and about twelve or fifteen miles from the ancient Hermopolis, now called Damanchour, the capital of the province of Beheira, near Marcole, and a day's journey from Alexandria.

These lakes are dry during the spring, summer, and autumn, but in winter yield a nitrous liquor which sometimes rises four or five feet high, and  
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is of a dark red, or blood colour, and the bottom of these lakes is always firm and smooth as marble, even when they are filled with water.

This nitre is sometimes of a dirty black, and sometimes of a bright carnation red, tho' the first is most esteemed. The workmen employed in getting the nitre stand naked in the lake with iron bars about six feet long, and as thick as one's finger, and striking with these bars pointed at the end, as they do in quarries, they break off pieces as large as cakes of soap.

In these lakes the nitre is covered with a foot or two of water, and is four or five feet deep in the earth, but what is taken out one year, is renewed the next, or some years after, by a new nitrous salt, supplied by the juice of the earth. To preserve this fecundity, the Arabians take care to fill up the empty spaces with substances of all kinds, as sand, mud, bones, carcases of animals, horses, asses, and such like. All which substances are converted into true nitre, so that workmen returning a year or two after, find a new harvest in those places they had before exhausted.

Pliny is mistaken when he says, that the Nile acts in the nitre beds, as the sea in those of salt, since these two lakes are, by their high situation, inaccessible to the inundations of the Nile. It is however certain that rain, dew, and mists, are the true parents of nitre; that they hasten its formation in the bosom of the earth, that they multiply it, and make it red; for there is white, yellow, and black nitre.

When they have gathered the nitre, they immediately load camels, and other beasts of burden with it, without deterfion, depuration, lixiviation, or other preparation, since the nitre comes from the mines pure and perfect.

That

That of the great lake is carried to Terrane on the Nile, where it is piled up and exposed to the air, till they sell it, and that of Nebide is transported to Damanchour, where it is laid up in magazines.

Nitre serves to whiten copper, salt, and linen; and is employed by dyers, glass-makers, and goldsmiths. Bakers also puff up their bread with it, by mixing it with the paste; and cooks make their meat tender with it.

The peasants of Terrane are obliged to carry every year from the great lake forty thousand quintals of nitre, which is instead of a rent for the lands they have sown.

The peasants about Nebide are charg'd likewise to bring from their lake thirty-two thousand quintals a year, at their own expence, to Damanchour.

Besides nitre, they gather in certain places of the lakes ordinary white salt of a fine colour, and they find likewise *sal-gemmæ*, which is imported in small pieces of a pyramidal figure, that is to say, square at the base, and ending in a point; but this last salt is only found in the spring. The matter of the *sal-ammoniac* is nothing but soot, which they scrape from their chimnies, where they burn animals dung mix'd with straw. These clods impregnated with alkaline urinous salts, give the soot a certain quality, which it would never acquire from the smoak of wood or coal, a quality, however, absolutely necessary for the production of *sal-ammoniac*.

The vessels which contain the matter nearly resemble bombs, since they are large round glass bottles, a foot and half in diameter, with a neck two fingers long. They cover the inside of these bottles with pinguious earth, and fill them with soot to about four fingers breadth from the neck,

which remains empty and open. Into these vessels are put about forty pounds of foot, which at the end of the operation yields about six pounds of sal-ammoniac; and the foot of an excellent quality furnishes above six pounds, and others in proportion.

Their furnaces, or ovens, are disposed like ours, except that their arches are opened by longitudinal apertures, on each of which there are four bottles, so arranged, that the bottom of each bottle being exposed to the heat of the flame, the sides are lodg'd in the thickness of the vault, and the neck of the bottle is only expos'd to the air; as for the rest of the aperture it is well cover'd, and luted. Each of these furnaces contains sixteen bottles, and each grand laboratory is compos'd of eight furnaces, dispos'd into two chambers, and consequently employs at once six score of bottles.

In each furnace they keep up for three nights and days a continual fire made of animals dung mixed with straw. The furnace is deep, and the fire distant from the bottles, to avoid breaking them. The first day the gross phlegm of the foot exhales, by a thick smoak, rising from the neck of the bottle, which remains open. The second day the volatile salts being exhaled with those of the alkaline kind, adhere to the upper part of the bottle, whose neck they close up, by uniting and coagulating. The third day the coagulation is continued, purified, and perfected; after which the operator makes a little hole on the side of each bottle, a finger's breadth beneath the neck, to see if the matter be sufficiently prepar'd, and if there be nothing to evaporate. After having well observ'd this, he stops up the hole with clay, and opens it from time to time to see the progress of the operation.

When he sees it come to the desired perfection, he removes the fire, breaks the bottle, and throws away the ashes at the bottom, but keeps the white, round, transparent mass, of the thickness of three or four fingers, fix'd and suspended by the neck, and which is called *sal-ammoniac*. Under this *sal-ammoniac* is fixed a black crust two or three fingers thick, called *aradi*, under which the ashes remain at the bottom of the bottle; they cast away the ashes, but keep the black crust in the bottles. Of this crust is formed a *sal-ammoniac*, of the whitest colour and best quality, which they call *mecarrar*; and this salt is dearer than the other.

In the two towns of Delta, adjacent to each other, called *Damanger*, a league from the city of *Massoure*, there are twenty-five great laboratories, besides some small ones, in which there are made every year, at least, fifteen hundred, or two thousand quintals of *sal-ammoniac*. In the rest of Egypt there are but three, two in Delta, and the third in Cairo, which produce yearly twenty or thirty quintals of this salt.

The use of *sal-ammoniac* is well known to the tanners of copper vessels; to goldsmiths, plumbers, and particularly to chymists and physicians.

Egypt abounds in marbles of different kinds; the granate, or Theban marble, is mark'd with several colours; red prevails in some, and black in others. All these kinds of granate marble are taken from the quarries of the higher Egypt, near the Nile, between the first cataracts, and the city of *Affouan*, formerly *Syene*.

The white and black marble are found on the north of *Affouan*, upon the eastern borders of the Nile.

There are quarries of yellow, red, and black marble, near the famous monastery of *St. Anthony*,

thony, in the desert of the Thebaide, at the western foot of mount Golzim, in the plain of Araba, seven or eight leagues from the red sea.

There were formerly quarries of these different marbles, and of porphyry, in certain places of Egypt, and out of it ; but these are not now to be found. The avarice and indolence of the Turks have long ago made the ways to these quarries quite forgotten, since they use the ruins of ancient buildings to supply themselves with marble. Mount Sinai, and all the mountains which surround it, are nothing but granite, as well as the vallies and mountains, two days journey to the north of Sinai. The mount of St. Catharine is of the finest sort, and mixed with black veins, resembling shrubs.

Towards Assouan, betwixt the Nile and the red sea, they cut out of the quarries a white round stone called *beram*, of which they commonly make in all the Said, and at Cairo, kettles, and other kitchen utensils. This stone bears the fire, and when it happens to be broken, they very neatly join the broken pieces by iron rivets, and cement the joinings with powder of the same stone.

They find in the province of *Fioum*, formerly *Asinoite*, a kind of little oblong stone, of a brownish colour, intermix'd with little yellow specks, that are almost imperceptible, which is formed of a sand of the same colour, in a plain about two hundred paces long, and as many broad. The natives call this the nut-stone, on account of its figure.

Two leagues to the east of Cairo, there is a plain of sand called *sabil-el-allam*, covered with pebbles, some of which contain a kind of rough diamonds. They break the stone, from which  
they

they take this little brilliant, of which, when cut and polish'd, they make rings and bracelets.

The chicken oven is a structure buried in the earth, and like a dormitory ; the alley which is in the middle, has four or five chambers on each side.

The entrance of the alley is very low, and narrow, and is stopped with tow, to preserve a continual heat through the whole furnace.

The breadth of these chambers is about four or five feet, and their length three times as much. These chambers have two stories ; that below is even with the ground ; and that above has a floor, wherein there is an opening in the middle, and the roof is arched, and also open.

Instead of a door, each story has a small window a foot and a half in circumference.

The lower story is filled with four or five thousand eggs, and perhaps more ; for the profits of the undertaker, are in proportion to the number ; besides, such a multitude of eggs contributes to preserve the heat, which communicates itself to them all thus heaped upon each other.

The higher story is for the fire, which is lighted for eight days, but is not kept continually burning ; for in this case the heat would be excessive and hurtful. They light it only for an hour in the morning, and as long in the evening, which they call the dinner and supper of the chickens. This fire is made of cows dung, or that of other animals dried and mix'd with straw, but they exclude wood and coal, which would make too strong a fire.

The smoak is discharged thro' the aperture of the higher story ; but it is to be observed, that while it remains open, they stop the little window of the lower story with tow, and the round hole



of the arch, that the heat may communicate itself by the opening of the floor to the lower story where the eggs are deposited.

After the eighth day the scene is changed, since they extinguish the fire ; and the story where it was being empty, is filled with a part of the eggs which are taken from below, to give them more room, and distribute them equally in the two stories ; the doors or little windows of these two stories which had been open are closed, and they half open the hole of the arch, to let in air.

This condition of the eggs without fire is assisted only by a heat which is moderate, and concentrated for thirteen days, which added to the former eight, make twenty one. It is about the eighteenth day, that a vivifying spirit begins to actuate the white of the egg, and the chick is already formed, so evidently, that through the shell we see it move, and nourish itself with the yolk, which it sucks in by the navel.

Two days after, viz. on the twentieth, the chicken applies its beak to the shell, and breaks it, upon which the manager with his nail, enlarges a little the breach, to assist the weak efforts of the chicken.

On the twenty-first at noon, or the twenty-second in the morning, all the shells are broken, and an army of little birds are seen to disengage themselves from their prisons, which is a charming spectacle. Eight chambers, but yesterday, appeared covered with inanimate shells, and to-day are filled with almost so many living birds ; I say almost, for the number of eggs always exceeds that of chickens.

The manager will but answer for two-thirds of the eggs, so that the undertaker putting, for example, six thousand eggs into the hands of the manager, requies from him no more than four thousand

thousand chickens at the end of the operation. The rest are left to chance, and almost one third of them generally perishes.

But as it often happens, that the eggs succeed beyond expectation, all the profit does not go to the manager, since the undertaker has a large share of it. The manager is obliged to restore him for six medins every hundred chickens hatched beyond the two thirds; and we are to remark, that the undertaker will sell the hundred chickens at least for thirty medins.

What seems surprising is, that in the great number of men, who inhabit Egypt, where there are three or four hundred ovens, there are none but the inhabitants of the village Berme, situated in Delta, who have the hereditary industry to make these ovens, since the other Egyptians are entirely ignorant of them.

They only work in these ovens for six months, during autumn and winter, because the spring and summer are too hot, and contrary to this labour.

When therefore the autumn approaches, we may see three or four hundred Bermeans quit their habitations, and set out, in order to take on them the direction of the furnaces that are built in several villages of the kingdom.

They are necessarily employed in this labour, because they are the only persons who have the knowledge of the art; whether they have the cunning to keep the secret, or whether no other Egyptian cares to give himself the trouble to learn and exercise it, can hardly be determined.

The directors of these chicken ovens are maintained by the undertaker, have forty or fifty crowns salary, and are obliged to pick the eggs brought to them, that none may be used but

Such as they think proper for the purpose. They further engage to watch night and day, to shift the eggs continually, and keep up the degree of heat proper for this operation, since ever so small a degree either of heat or cold, more than is sufficient, would spoil the whole.

Notwithstanding all the care and diligence of the manager, it cannot happen, but that in so great a quantity of eggs heaped on each other in the furnace, there must be several which do not answer; but a skilful operator knows how to indemnify himself from this disaster; for in this case he preserves the yolks of such eggs as are otherwise useless, and with them feeds several hundred chickens, which he brings up, and fattens in a separate place made for that purpose. When they are fat and strong, he sells them, and faithfully divides the profit with the undertaker.

Each furnace has twenty or twenty-five villages which use it in particular. The inhabitants of these villages are obliged, by order of the bashaw, and the superior tribunal of justice, to carry all their eggs to the furnace that is assigned to them; and they are forbidden to carry them elsewhere, or to sell them to any one, unless to the lord of the place, or the inhabitants of the villages which are of the same district, by which method it is easy to comprehend, that the furnaces cannot want employment.

The lords have yearly by these chicken ovens, of which they are masters, fifteen or twenty thousand chickens, which cost them nothing. They distribute them to the inhabitants of their lordships, on condition that the half of the profit, that is to say, the vassal who has received four hundred chickens from his lord, must restore him two hundred, or an equivalent in money.

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These directors of the ovens being asked if their art would succeed in France, affirmed, that they did not doubt it; and that it would be easy for them to direct these ovens in such a manner, that the difference of the climate should prove no obstacle to the operation.

Near Terrane, a village situated upon the banks of the Nile, we find the great sea of the desert, which the Arabians call \* Bharbelama, because it is a sea without water.

As we advance into this plain, or lake without water, the bottom is deeply hollowed, and in certain places seems, as it were, lost in an abyss, after which the ground or bottom rises, and extends itself in large canals, which terminate in other cavities and abysses; so that nothing more resembles a dried lake, than those hollow places; for on the ridge of the plain, and at the brink of these vast ditches, we see here and there masts laid on the ground, with pieces of wood which seem to come from the wrecks of ships; but if we touch them, what appeared wood, whether entire masts or broken planks, is found to be stone; a change which can only be attributed to the nitre, with which the soil abounds. There are above one hundred and fifty of these petrified masts; and we find many as we advance farther.

The change of wood into stone is not the greatest prodigy found in the plain of Bharbelama, since the sand there is also converted into the eagle-stone, which is found in a great number of places, two or three fingers breadth, below the ground; and in little quarries or mines some paces long and broad, about half a mile distant from each other. The earth sends out from its bosom a kind of metallic substance, which ferments with the burning sand, and in fermenting  
assumes

\* Others call it Babarbalaama.

assumes a fortuitous round figure, and takes up the neighbouring sand, which is larger; after this, it is gradually baked, hardened, and becomes black by the heat of the sun. In this manner is formed that hollow, sounding, shaggy stone, which is called the eagle-stone.

It is to be observed, that all the aerites, or eagle-stones are not naturally black, since some are of a violet, yellow, or cineritious colour. The aerite in the mine has three qualities, which it loses when out of it. It is tender and brittle as an egg, mute, and without sound; and is of a sprightly and deep colour, but after having been exposed to the air, it is hardened by degrees like coral. The clay in its cavity being dried gradually takes up less space, and consequently sounds, when it is shaken; its yellowish or violet colour grows brown, and darker than it was before.

The goodness of the mine is known by the following observation. If the earth you rake is hot, and variegated with different colours, then the eagle-stones are excellent, and found in great plenty. On the contrary, if the clay be dry, cold, and of an uniform colour, you will meet with few or none considerable.

The ancient naturalists have related abundance of fables about the eagle-stone, some having imagined a kind of propagation in it. The eagle-stone is called by the Arabians *maskee*; that is to say, containing; probably because it contains in its cavity a kind of gravel, which being dried, and loose on all sides, renders the stone sounding when it is shaken; but it is not essential to this stone to have cavities.

In the same plain of *Bharbelama*, we find a great heap of sand, which is called the hill of eagle-stones, because it is all covered with them, not in little pebbles

pebbles, but with rocks of the same substance as the small eagle-stones, this only excepted, that the pieces are not hollow.

## C H A P. XXX.

*Of the different kinds of fishing in Egypt ; of the birds of the Nile ; of the sea-horses and crocodiles.*

**N**One but the merchants of Damiette and Rosette transport to the coasts of Syria the salt-fish of Egypt ; and only the inhabitants of the banks of the lake of Manzale, Brulos, and Beheire, furnish the salt-fish, exported from the kingdom, since the inhabitants of the banks of other lakes sell only fresh fish, which they dispose of on the spot.

The lake of Manzale begins on the east, half a league from Damiette, formerly called Thamiathis, and ends at the castle Thine, formerly Pelusium. It is twenty-two leagues from east to west, and five or six broad from north to south, and has a bottom which is muddy, and full of herbs. It is but four feet deep, or thereabouts, in any place, and is only separated from the sea, by a bed of sand, which at most is but a league broad, which however does not hinder the lake from having a communication with the sea, which it has to the north by three mouths, viz. that of Thine, which is the most eastern, called formerly the Pelusian mouth of the Nile ; by Eumne Furrege, formerly called the Tanitic ; and by Dibe, or Pesquiene, formerly Mendenesia.

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Besides this communication with the sea, the Nile falls into the lake by several channels to the south, for which reason during two or three months of the year, that is to say, during the summer, which is the time of the overflowing of the Nile, the waters of the lake Manza'e are sweet, whereas in the other nine months of the year they are salt, and resemble the water of the sea. This is not surprising; for then the channels of the Nile are either dry, or so empty of water, that very little runs thro' them into the lake.

The lake of Brulos, which is fifteen or eighteen leagues long, and four or five broad, is situated between Damiette and Rosette.

The lake of Beheire, which is at most but seven leagues in circumference, is situated between Rosette and Alexandria.

Every one has not the liberty of fishing, since this right is confined to two thousand, each of whom pays about forty shillings to the aga of the lake, who accounts for it to the bashaw of Cairo. This is not all, since every third part of the fish, fresh or salt, belongs to the royal treasury, and they pay for the rest certain duties, so that the whole amounts to eighty purses a year, and the lake of Manzale alone brings in forty thousand crowns a year to the Grand Signior.

It is surprising to see the quantity of boats, that are continually employed in fishing on the Manzale, since there are no less than a thousand of them, which are only four fathoms long, and one broad, flat bottom'd, and pointed at the stem and stern.

Their manner of fishing is singular, and diverting, since the fishermen make an inclosure compos'd of rushes, which they plant in the lake, to catch and intangle the fish, and then surround it  
with

with their nets, and each fisher is proprietor of one, or more of these inclosures.

Sometimes they are contented to fish with a round net; in which case, before they use it they throw into the water, ten or twelve paces from them, a rope of two fathoms length, that has at one end a large stone proper to sink it to the bottom, and at the other a piece of wood, which floats on the surface; they then cover it with the net, while the fish, which flock to the stone as to a prey, are taken in it.

'Tis to be observ'd, that the lake Manzale is full of little islands covered with reeds, rushes, and cops. To these islands the fishermen carry their fish, when they want to cut up, salt, and barrel them, but for such as they design to sell fresh, they carry them, to Damiette, or to the towns or cities about the lake. These islands are charming, on account of the multitude of birds of different colours, and surprising beauty, and which only fly from one island to another. The pelican, the rice-hen, the water-hen, the coot, the Nile-goose, the common duck, the green headed duck, the teal, the black ibis, the black and white ibis, the grey and white cormorant, the white cormorant with a red bill, the chevalier, the dipper, and the crane, with several other birds, are there found in great numbers.

The fishermen only wear a pair of drawers, and have the rest of the body entirely naked.

The fish taken in these three lakes may be reduced to seven or eight sorts, to wit, the queiage, the deaf fish, the jamal, the geran, the noqt, the karous, the mullet, and the dolphin.

The queiage, which is the best fish in the lake, is of the size of a shad, and green under the mouth. The deaf fish and the jamal are much larger



larger than the queiage, and are excellent fish. The geran, the karous, and the noqt, which has this particular, that it is speckled, may pass for good fish, having an exquisitely fine taste, which the waters of the lake Manzale give to all the fish that are in it. The dolphins swarm in this lake, especially towards the mouth, which communicates with the sea, and the mullets are still more numerous than the dolphins.

They salt both the male and female mullet, and dry it either in the sun, or in smoak, with this difference only, that they sometimes sell male mullets fresh, but never the female, because as soon as they have made their draught, they take out the roes, which renders them unfit for sale, so that they are obliged to salt them.

They also salt the queiage, and these with their roes are the only species of salt fish in which the Egyptians trade. They transport all these spices into Syria, Cyprus, and Constantinople; and furnish Egypt with a sufficient quantity.

In Egypt we find no salt fish imported, except the carier, which comes from the black sea.

The Egyptians, in exchange for their fish, bring other commodities from Cyprus, such as carob-bean, laudanum, and wine; from Syria, cotton and tobacco; from the Archipelago, sponges; and from the red sea incense, coffee, and Indian stuffs. When European merchants bring yellow amber and coral, the Egyptian merchants buy these goods to transport them to Cairo, and thence into Jemen and Ethiopia.

In this country fresh fish is very plentiful, and the common food of those who live about the lakes. The heat of the climate is the reason why they cannot transport them, as they do in Europe, even to places

places at a small distance. The inhabitants of Cairo eat no fresh fish, except those caught in the Nile, which generally have neither a good taste nor a salutary quality, because the bottom of the Nile is full of mud, on which the fish feed, and acquire from it a bad smell and relish. Such are the boul-tis, a kind of carpe, the bauri, the bayard, the chalbe, the thorn-back, the chilon, the lebis, the shad, which are the principal fish of the Nile, and which none but the inhabitants of Cairo would eat.

But yet there are in the Nile four kinds of fishes of so exquisite a taste and goodness, that formerly the Egyptians built temples and cities which they consecrated to their names. The fishes of this kind are the variole, the quechoue, the bunni, and the quarmond.

The variole is of a prodigious size, and weighs a hundred, and sometimes two hundred pounds.

The quechoue is of the size of a shad, and has a very sharp snout; and this is the oxirinchus of the ancients.

The bunni is pretty large, weighs twenty or thirty pounds, and is the lepidolus so much extolled by the ancient Egyptians.

The quarmond, known in authors by the name of phayob, is black, one of the most voracious fishes, and sometimes as large as the bunni.

Besides, these fishes are never out of season, but are found in plenty throughout the year in the Nile. We must add, that they are easily caught, since notwithstanding their size, they are taken with a common net, as fresh water fish in Europe.

The Egyptians might take both sea and river birds; such as ducks, dippers, &c. with which the Nile is often covered; but they are particularly fond of catching ducks. For this purpose the fisherman in the night goes into the water, up

to the chin, having a black bonnet on his head, gently approaches the fowls, and when he is near enough, suddenly throws a net over them.

On the Nile there are two sorts of birds found in a surprizing quantity, some of which are common, and well known in Europe; as the flaman, the stockdove, the curlieu, the curlieu with his bill turned upwards, the heron with a crooked bill, the pelican, the crane, the snipe, the plover, the bustard, the teal, the green headed duck, the sea duck, the cormorant, the dipper, &c. But the Egyptians do not go a fowling, and the country people only take ducks and coots, in gins, in the same manner as they do the pelicans, but leave the other birds to multiply without interruption.

The ibis, the goose with golden feathers, the rice or Diamette hen, the saq-saq, known formerly by the name of trochilus, are properly birds of the Nile; and if there are any of them elsewhere, as in the lake of Manzale, they originally came from the Nile.

No animals in the Nile, except sea-horses and crocodiles, can properly be called monsters; the former are very common in the Upper-Egypt, especially towards the cataracts of the Nile, tho' they are seldom seen about Cairo or in the Lower-Egypt. These animals so seldom go in troops, that it is a rarity to see two of them together; besides, they are so timorous and swift that nobody attempts to catch them, either by stratagem or otherwise,

But this is not the case with respect to crocodiles, which may be taken two ways; the first of which is entirely simple. They take the pluck of a cow, or a buffalo, or any other animal, and thro' the bait they pass a hook, to which they  
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\*tie a long cord, one end of which is fixed on the shore, while the other, to which the bait is fixed, is thrown into the Nile. As it swims on the surface the crocodile catches at it, and swallows the hook, after which the fisherman draws his line, and brings the crocodile to shore, where the Arabians, who are used to such exercises, kill him.

The other method is more dangerous, since they watch the crocodile, when he is on land and sleeps extended on some hillock of sand, upon which occasion one of them steals softly behind the bank; and when he is near enough he darts into his breast or belly a piece of wood armed with a harpoon, which is fastened to a long rope. Upon this the crocodile being wounded, runs to plunge himself in the Nile, and drags with him the instrument, but the fisherman follows him, seizes the cord, draws it, and brings the monster to the side, where he kills him; and in the same manner the porpoises are caught.

The flesh of the crocodile is white, fat, and exquisite food when young. The females never lay their eggs but on the sands; and it is remarkable, that their young come no sooner out of the shell, than they have strength to run with great swiftness towards the Nile, the care of the mother not being necessary either to defend the offspring, or prevent their being taken.

The crocodiles grow very fast, and are commonly twenty or twenty-five feet long. Plutarch says they live but forty years, tho' the Arabians, who know them better, say, that some of them live a hundred.

## C H A P. XXXI.

*Of the tree which bears wad; of the pepper, and lacca tree; of the wax produced by wild laurel trees.*

THE tree which bears wad, or that kind of fine cotton used to stuff cushions, night-gowns, waistcoats, counterpanes, &c. grows spontaneously, and without any cultivation, and the inhabitants of Siam, who have much of it, call it tonn-ghiou. There are two species of the wad-tree, the greater and the smaller; the former, which is also of two sorts, resembles a nut-tree in its form, and the disposition of its branches, tho' the trunk is generally higher and straiter, almost like that of the oak. The bark, in certain places, abounds with short prickles, which are broad at the base, regularly disposed, and very near each other. The leaves equally resemble those of the nut and chestnut-tree, since they always grow five and five, and their pedicles, which are very short, unite in a sixth common pedicle, which is often more than a foot long. The flower is of the form and size of a moderate tulip; but its leaves are thicker, and covered with a kind of rough down. The calix, which contains them below, is thick, and of a clear green intermixed with points of black; and in the form of that of the nut-tree, with this difference, that it is not denticulated above, except in three places.

This description is common to the two species of the large wad-trees, tho' they differ in the following particulars. Some bear the flower before

he leaf, and others the leaf before the flower. The former are more prickly, and fuller of branches than the latter, bearing flowers of a citron-colour, which are soft to the touch ; whereas the others are rough, and of a deep red within, but pale and yellowish without. In each there arises from the bottom of the flower a number of filaments with little buds, which are in a greater or less number, but divided into four little clusters, consisting of ten buds each, and placed at the bottom of the flower. Between the leaves and these, there is a fifth, composed of sixteen of these buds, in the midst of which there is a pistil a little opened at the top. In the others the buds are much more numerous, tho' without order or distinction, and as for the fruit, or rather the case which contains the wad, it is of an oblong figure, and resembles those angular banana figs, which the Portuguese call figos carocas.

The wad-tree of the second, or rather third species, is much less than the other two. Its trunk and branches resemble those of the Egyptian thorn, and its leaves are of a moderate size, of an oval figure, terminated in a point, and covered on both sides with a down that is very soft to the touch. The principal fibres which shoot from the midst of the leaf, are very distinct, and well ranged ; and the husks which inclose the wad are composed of two tubes, terminated in points at each extremity, joined together, commonly nine or ten inches long, and as thick as a man's little finger ; but some of them are more than a foot long. When they are broken green, they discharge a very white glutinous milk, and within them, when well pressed, we find the wad, with several yellow pippins of an oblong figure. These husks hang upon woody

pedicles, which are only the continuations of the branches, which form their five little foliages on their surface.

Let us now proceed to the pepper-tree, which is a scandent shrub, and requires a support, for which reason it is generally planted at the foot of some tree, about which it may twine: for this purpose they make use in Siam of a little prickly tree; or else fix near it rods, as they do in Europe among French beans. It's stem has knots like those of the vine, and the wood itself, when dry pretty much resembles vine twigs, except in the taste, which is very sharp. This stem sends out on all sides a quantity of branches, which adhere to every thing they can reach, and the leaf when the tree is young is of an equable faint green, which becomes deeper as the tree grows older, tho' the leaf always preserves a faint colour on the upper side; its figure is oval, but towards its extremity it diminishes, and ends in a point. It has six little ramifications which spread from the middle, and are so incurvated towards the bottom, and joined near the top in such a manner as to form three ovals, tho' only five of these ramifications are to be distinguished. These ramifications communicate with each other by a congeries of pretty large fibres, and the greatest leaves are about six inches long. They have a pungent taste, and the seeds before their maturity are green, and fix'd in a calix without a pedicle. They are of the form and bigness of a large musket ball, and the pepper, altho' green, is very strong; this tree bears but little at a time, so that hardly seven or eight ounces can be obtained from it.

As for the lacca, it is principally found at Lahos, and at Camboye, adhering to two different kinds

kinds of trees, and certain red insects nearly resembling ants, produce it much after the manner in which bees make honey, by forming little cells like honey-combs. Some imagine the lacca is formed of the excrements of these insects, while others assert, that it is found about certain shrubs four or five feet high, whose trunks are not above an inch or an inch and a half in diameter; that it is generated by a species of dew, which falls every year in the months of June and July; and that certain red ants, fond of this dew, soon cover those trees with it. These two accounts, seemingly so different, may, in my opinion, be reconciled, if we suppose, that these insects or red ants do not of this dew produce the lacca, which is a kind of dregs, as wax is in regard of honey, but that juice which is extracted from it, and serves for those red dyes that are so much esteemed; and that with regard to lacca, they yield it either by their own excrements which they mix with the dew, or with the dust of certain flowers, or other terrestrial matter, which they perhaps gather like bees, nature having always an uniformity in her productions.

The islands situated between Acadia and New-England, are surrounded with wild laurels, which in autumn bear seeds not unlike those of the juniper. They fill cauldrons with them, and boil them in water; in consequence of which the virgin wax swims at the top, in proportion as the water boils. From half a sextier of these seeds they obtain near four pounds of wax, which tho' very pure and beautiful, is neither soft nor yielding. After some trial it has been found, that by mixing with it an equal quantity of the suet, either of beef, mutton, or lamb, they may make fine wax-candles, which are no less firm than useful. With twenty-four



pounds of wax, they can make two hundred candles above a foot long. There is such a number of these laurels in the woods, and on the shores of the sea, that a single person may in a day easily gather two sextiers of these seeds, which hang in clusters on the branches of the trees.

## C H A P. XXXII.

*Of the savage Natches, their religion, laws, assemblies, and festivals; form of their government; ceremonies of their marriages and funerals; their manner of carrying on war; their marches, encampments, and method of entertaining the ambassadors who come to treat of peace.*

THE savage Natches live on the right of the river Mississippi, about a hundred leagues from its mouth, and are the only people on that continent who seem to have a national religion, which in a good many respects resembles that of the ancient Romans. They have a temple full of such idols as represent the different figures of those men and animals for whom they have the profoundest veneration. Their temple is about an hundred feet in circumference, has a door four feet high and three broad, but is without any windows. The roof of the edifice is covered with three matts laid over each other, to hinder the rain from hurting the walls. On the battlement are three wooden eagles, painted red, yellow, and white, and before the door is a sort of shed,

shed, where the guardian of the temple lodges, and round the whole there are palisades, on the points of which they fix the heads of those whom they have made captives in war.

Within the temple there are shelves placed at a proper distance from each other, on which are placed oval baskets made of reeds, wherein are included the bones of their deceased chiefs, and near them those of the victims who have destroyed themselves to follow their masters into the other world. Upon another shelf are several baskets elegantly painted, and us'd as repositories for their idols.

In this temple they preserve a perpetual fire, and take care to prevent its flaming, for which reason they only use the dry wood of the nut-tree, or the oak, and the elders are obliged in their turns to bring a large billet into the inclosure of the palisade. The number of guardians for the temple is fixed, and they serve quarterly, so that he who is upon duty is like a centinel under the shed, from whence he sees whether the fire is in danger of going out, and keeps it in by two or three great logs, which burn only at the extremity, and are never put upon each other, to prevent the flaming.

None of the women, except the sisters of the great chief, have the liberty of entering into the temple, which is also forbidden to the vulgar, even when they bring food for the manes of their relations, whose bones are deposited in it. These aliments are given to the guardian, who carries them to the side of the basket, where the bones are deposited; and this ceremony only lasts for a month, after which the dishes are placed on the palisades, and left to the wild beasts.

The sun is the principal object of their worship, and their chief takes upon him the title of brother to the

the sun, and has a despotic power over the people. His cottage is built on an eminence, and is of the same figure with the temple. Every morning he honours the levy of his elder brother, and salutes him with several shouts when he appears above the horizon, after which he orders them to light his great pipe, and makes an offering to him of the three first blasts ; then raising his hands above his head, and turning from the east to the west, he pretends to shew him the course he is to steer. On entering this cottage we see several beds on the left, but on the right only that of the grand chief, adorned with several paintings. This bed is inclosed by a palisade of canes, is made of very hard rushes, and has only a square log of wood which serves for a pillow. In the midst of the cottage we see a small stone, and none must approach the bed till he has gone round this stone. Those who enter make their salutations by shouts, and advance to the center of the hut, without looking to the right, where the chief is ; after which they make a second salutation, raising their hands above their heads, and shouting three times. If it is a person whom the chief respects, he answers by a gentle sigh, and makes him a sign to sit down, on which occasion they thank him for his politeness, by another shout. Upon each question propos'd by the chief, they give a shout before they answer ; and when they take leave they give one continued shout, till they are out of his presence.

When the great chief dies, they pull down his cottage, and build another for his successor. The Natches believe the soul's immortality, and say, when they leave this world, they are going to inhabit another, and be rewarded or punished in it. The rewards they expect consist chiefly in feasting,  
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and their punishment in the privation of all pleasures. They so implicitly obey the will of their chief, that none of them dare refuse him his head, if he demands it. One of their principal articles of religion, especially among the domestics of the chief, is to honour his funeral, by dying with him, in order to serve him in the other world, where they hope to enjoy the most exalted happiness in the retinue of their chief.

To form an idea of this strange ceremony, we must consider, that as soon as the presumptive heir of the great chief is born, each family which has a sucking child, must pay him homage, and they chuse always among these children a certain number, who are designed for the service of the young prince ; and when they are of a competent age, they give them an employment adapted to their talents. Some of them pass their lives either in hunting or fishing for the service of his table ; others are employed in agriculture, and others only wait upon him in publick. If he happens to die, all his domestics sacrifice themselves with pleasure to follow so dear a master, put on their best cloaths, go to a place opposite to the temple, where the people are assembled, and after having danced and sung a long time, they put round their necks a rope of oxes hair, with a noose, and immediately the proper officers strangle them, exhorting them all the time to meet their masters again, and take in the other world more honourable employments than those they have occupied here below.

The same ceremony is also observed on the death of the brothers and sisters of the grand chief ; and all his wives suffer themselves to be strangled, that they may follow him, unless they have children at the breast, tho' some of them seek for nurses,

nurses, or strangle their children, not to lose the right of sacrificing themselves.

The government is hereditary, tho' it is not the son of the reigning chief that succeeds his father, but the son of his sister, or of the first princess of the blood, which policy is founded on the known incontinency of their wives; for they are not sure, say they, that the children of their wives are of the royal blood, whereas the son of the sister of the grand chief is at least so on the side of the mother.

The princesses of the blood never marry any but persons of a low condition, and have only one husband; but they have the liberty to divorce him when they please, and chuse another in the nation, provided he is not of the same family. If the husband is unfaithful to the marriage-bed, the princess immediately orders his brains to be knocked out, but she is not subject to the same law; for she may have as many lovers as she pleases, without the husband daring to mutter one word; in her presence he behaves with the highest respect, never eats with her, and salutes her with shouts, as all her domestics do, so that the only pleasure he enjoys, is to be exempted from labour.

The great chief nominates persons to all the considerable employments of state; such as generals; the two masters of ceremonies in the temples; the other two officers who preside over the ceremonies observed when strangers come to treat of peace; the inspector of all public works; four others appointed to regulate the feasts in which the nation, and those strangers who come to visit them, are entertained.

Every year the people assemble to sow a vast field with Indian corn, beans, pumpkins, and melons, and they meet in the same manner to reap them.

them. Every summer, towards the end of July, the people assemble by order of the grand chief, to assist at the great feast, which continues three days and three nights. Some bring game, and others fish, on which occasion they dance almost perpetually. The great chief and his sister are in an elevated apartment, which is covered with leaves, from whence they contemplate the joy of their subjects. The princes and princesses, and those of distinguished rank, are pretty near the chief, to whom they pay their respects and submissions by a great number of ceremonies.

Nothing can be imagined simpler than the ceremonies of their marriages; for when a young fellow intends to marry, he must speak to the father of the girl, or else he being absent or dead, to the eldest brother: they agree for the price to be paid in skins or merchandize, and tho' a girl has been a prostitute, they do not refuse her on that account, provided they think that she will change her conduct when she is married. As for the relations of the girl, their only care is to inform themselves whether the lover is a good hunter, a skilful warrior, or an excellent husbandman, since these qualities considerably diminish the price of the girl. When the parties are agreed, the bridegroom goes a hunting with his friends, and when he has got as much game or fish as will regale the two families, they go to the bride's house, where the new married couple, who eat on the same plate, are particularly waited on. The repast being over, the new married man presents a pipe to the relations of his wife, and then to his own, after which the company retires; and the next day the husband leads his wife to his father's, where they stay till the family has built them a cottage.

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Their laws permit the Natches to have as many wives as they please; but the common people have generally but one] or two. The heads have more, because by the privilege of having their fields cultivated by the people without any wages, the number of their wives is no burden to them. They content themselves with sending for the father of the girl they have a mind to marry, and declare they rank her with their other wives; the marriage is thus at once compleated, and tho' they have several wives, only two or three stay in the cottage; while the others live with their parents, and their husbands visit them when they please.

At certain times of the moon the savages do not cohabit with their wives, and the men are so little inclined to jealousy, that they sometimes lend a wife to a friend, which indifference arises from the liberty they have of changing their wives when they please, tho' after a child is born, nothing but death can separate them.

When this nation makes a levy for a war, the chief of the party fixes two standards, which are two red poles adorned with plumes, arrows, and axes of the same colour, and these poles are full of iron spikes towards the quarter, on which they design to make war. Those who intend to enter into the army, after having bedaubed themselves with several colours, come to harangue the general, and this harangue consists in a thousand protestations of service, by which they assure him they are extremely glad to learn under so skilful a warrior, the noble art of scalping, and that for his sake they neither are afraid of hunger, nor the fatigues to which they may be expos'd.

When a competent number of soldiers present themselves, he orders a certain potion prepar'd at his

his house, which they call the medicine of war, and which is an emetic compos'd of a root, which they boil in great cauldrons of water. Sometimes about three hundred of the soldiers sit round the cauldron, and each has a large quantity of this liquor given him, which they swallow at one draught, and vomit it up with such violent efforts, that they are heard at a considerable distance.

After this ceremony, the general fixes the day of departure, that each may prepare necessary provision for the campaign, during which interval the soldiers repair evening and morning to the rendezvous, where, after dancing and recounting their exploits, they sing the song of death.

But these bravoes are so superstitious, that after all these ceremonies, they stop their march all on a sudden, if they but hear a dog howl in a particular manner.

In their expeditions they always march in files, and four or five of the best pioneers go about a quarter of a league before the main body of the army, to observe the posture and disposition of the enemy. They encamp every evening an hour before sun-set, and lye about a great fire, every one having his arms by him ; but before they encamp they take care to disperse twenty soldiers to the distance of half a league from the camp, to prevent their being surpris'd. They never place centinels in the night-time ; but as soon as they have supped, extinguish all the fires. They also fix on a spot where they are to rally, in case they should be attacked, and routed in the night.

As the generals always carry along with them their idols, or what they call their spirits, carefully inclosed in skins, in the evening they hang them up on a little red pole, which they incline a little, that

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it may point to the enemy, and the soldiers before they go to sleep, with their ax in hand, pass one after another dancing before these pretended spirits, and making great menaces towards the quarter of their enemies.

When the army is considerable, and enters the enemy's country, they march in five or six columns, and have many spies; and if they perceive that their march is discovered, they commonly return, and only a small company of about twenty, separate from the army, to surprise any stragglers from the villages, and on their return they rejoice, on account of the number of the scalps they have brought with them. If they have brought any slaves, they make them sing and dance some days before the temple; after which they make a present of them to the relations of those who have been killed in the war, who weep during this ceremony, and drying up their tears with the scalps, pay great respect to the soldiers who have brought these slaves, whose miserable lot it is to be burnt.

The Natches, as all the other people of Louisiana, distinguish by particular names those who have killed a greater or a smaller number of enemies, and to deserve the name of a great manslayer, a person must have taken ten slaves, or scalped twenty heads. Those who have made their first slave, or scalped their first head, do not for some time after their return, either lye with their wives, or eat any flesh, but must live on fish and broth for six months. If they should neglect to keep this fast, they believe the soul of him they have slain would destroy them by incantation, that they should never more gain any more advantages over their enemies, and that the least wounds would prove mortal.

They take great care, that the general should never expose his life in battle, and if he should be killed,

killed, the heads of his party, and other principal warriors are put to death at their return ; but such examples never happen, by the precautions taken to prevent this calamity.

This nation, as all others, has its physicians, who are generally old men, whose art consists in several pieces of legerdemain. They dance, sing, smoke, swallow the fumes of tobacco, and put themselves into such violent contortions, that tho' they are quite naked, and must suffer cold, their mouth is always full of froth. They have a little kind of basket, wherein they pretend to carry their spirits, that is to say, little roots of different kinds, the heads of owls, little packets of wild beasts hair, some animals teeth, several pebbles and stones, with other frivolous things, and pretend to fast, while they cure the sick.

They seem perpetually to invoke what they have got in the basket for the recovery of the patient, and some of them have a certain root, which by its smell renders serpents stupid, and lays them asleep. After they have well rubbed their hands and body with this root, they will hold these animals without fearing their bite, which is mortal, while others make an incision with a flint in the part affected, and suck out all the blood they can ; and in spitting it out on a plate, they discharge along with it a little piece of wood, or straw, or leather, which they had concealed under their tongue, and then desiring the relations of the patient to take notice of it ; behold, say they, the cause of the disorder. These physicians are always paid beforehand ; and if the patient recovers, their profit is considerable ; but if he dies, they are sure to have their brains beat out by the relations or friends of the deceased. This practice prevails universally, and the relations  
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of the physician find no fault, nor testify any resentment.

The same happens to other jugglers, who undertake to procure rain or fine weather. These are commonly idle old men, who disliking the labour requisite for hunting, fishing, and the cultivation of the land, exercise this hazardous profession to maintain their families. Towards the spring, this nation tax themselves to obtain of these jugglers a favourable seed and harvest time; and if it is considerable, they gain in proportion; but if otherwise, they seize them and knock their brains out. Thus they who engage in this profession, risk their lives for a precarious subsistence; but in other respects their life is very idle, having nothing to do but fast and dance with a pipe or reed in their mouth, which is full of water, and pierced at the end like a watering-pan, which they blow into the air towards that quarter where the thickest clouds appear. They hold in one hand their sirriouet, which is a kind of coral, and in the other their spirits, which they present to the clouds, calling upon them to burst upon their fields.

If they want fine weather, they make not use of these pipes, but get upon the tops of their cottages, and with one of their arms extended make a sign to the clouds, puffing with all their strength, that it may not hover over their lands, but disperse; and when the cloud is dispersed according to their wish, they sing and dance about their spirits, which they place properly on a pillow. On this occasion they redouble their fasting; and when the cloud is passed, they swallow the smoak of tobacco, and make an offering of their pipes to heaven.

Tho' they shew no mercy to these knaves when their pretended power has no effect, yet the profit they gain when they happen to succeed, is so great,  
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that there are a great number of these savages who are regardless of the danger. We should observe, that he who undertakes to procure rain, never engages to procure fair weather; since another species of quacks enjoy this privilege, and when they are asked the reason, they answer, their spirits have but the power of obtaining one of the two.

When one of these savages dies, his relations lament over him a day, and then cover him with his best cloaths; that is, they paint his hair and face, and adorn him with his plumages, then carry him to the grave designed for him, placing at his side his arms, a kettle, and victuals. For a month, his relations go at break of day, and at the approach of night, to weep for half an hour over the grave, every one mentioning his degree of consanguinity; if it is a father of a family, the widow bawls out, my dear husband, how much I bewail the loss of thee; the children say, my beloved father; some, my uncle; some, my cousin, &c. The nearest relations continue this ceremony for three months, cut off their hair to denote their sorrow, cease to paint their bodies, and never go to a place of diversion.

When any foreign nation comes to treat of peace with the savage Natches, couriers are sent to give notice of the day and hour of their entrance. The great chief gives orders to the master of the ceremonies, to prepare all things for this grand transaction, and they begin by nominating those who are to maintain the strangers daily; for the chief is never at this expence, but always his subjects. They then clear the roads, sweep their cottages, place benches in a great hall, which is on the elevated ground of the chief, at the side of his cottage. His seat, which is on an elevation, is painted and

adorned, and the bottom is covered with large mats.

The day on which the ambassadors make their entry, all the nation assembles, and the master of the ceremonies places the princes, the heads of villages, and the elders of families, near the grand chief. When the ambassadors come, and are fifty paces from the great chief, they stoop, and sing the song of peace ; and this embassy generally consists of thirty men, and six women. Six of the finest personages, and who have the best voices, march first, and are followed by others, who sing likewise, regulating the cadences with their coral, while the six women form the treble.

When the chief bids them approach, they advance ; and those who have the pipes sing, and dance with great agility, turning round each other, and sometimes appearing in front, but always with violent motions, and extraordinary contorsions. When they are come into the circle, they dance about the chair, on which the grand chief is seated, rub themselves with their pipes from head to foot, and then fall back to those of their train. They fill with tobacco one of their pipes, and holding fire in one hand, they advance in a body to the chief, and desire him to smoke. They blow the first mouthful of the smoke up into the air, the next towards the earth, and the others round the horizon : After which they without ceremony present the pipe to the princes, and all the chiefs.

This ceremony being over, the ambassadors, in sign of the alliance, go and rub their hands upon the breast of the chief, and rub themselves all over the body ; after which they place their pipes before the chief upon small forks. The ambassador who is charged particularly with the orders of his nation, harangues for a full hour, and  
when

when he has done, they make a sign to the strangers to sit down upon seats ranged near the grand chief, who answers them in a discourse of the same length: after which, the master of the ceremonies lights a great pipe, or tube of peace, and makes the strangers smoke, who swallow the fumes of the tobacco. The great chief asks them if they are well, while others about him shew them the same politeness; after which they are conducted to a cottage prepared for them, where they are regaled.

In the evening, about sun-set, the ambassadors with their pipe or reed in hand go to meet the grand chief, and taking him on their shoulders, carry him to their own tent or cottage, where they spread a large skin, upon which he sits him down. One of them places himself behind him, and putting his hands upon his shoulders, agitates his whole body, while the others, seated in a circle on the earth, sing their noble exploits. After this ceremony, which is performed evening and morning, for four days, the great chief returns to his own abode, and when he pays the last visit to the ambassadors, they fix in the ground a stake or pole, at the foot of which they sit down: the soldiers of the nation put on their fine dresses, dance, and strike the pole, and relate in turn their martial actions; they then make presents to the ambassadors, which consist in cauldrons, axes, gun-powder, ball, &c.

The following day the ambassadors are permitted to walk all over the village, which they could not do before; after which they every evening entertain them with shews, that is to say, the men and women in their best dresses meet in the market-place, and dance till midnight; and when they are ready to return, the masters of the ceremonies furnish them with provisions necessary for their

voyage. Such are the ceremonies, such the genius of the savage Natches.

### C H A P. XXXIII.

*The singular dexterity of the Chinese in imitating fruits, insects, and butterflies; the shrub that furnishes the matter of which these flowers are made; colours laid on them, and the manner of giving them their lustre.*

THE Chinese workmen, especially those in the palace, manage silk with great ingenuity, and know how to paint with a pencil all kinds of leaves upon paper. They resemble pretty much those embroidered papers which are alike on both sides.

These flowers which so nearly resemble nature, are neither made of silk, nor any kind of stuff, nor paper, but of a reed, or species of cane, tho' they neither employ its bark nor root, which seemingly might be divided into small shreds.

But we must first know what this reed or shrub is which affords this substance.

The tong-tsao, or shrub of which we now speak, grows in the most shady and covered places. They have likewise given it the name of tongt-mou, because, according to the Chinese physicians, it is aperitive, laxative, proper to open the pores, and remove obstructions. This shrub grows on the declivity of mountains, and its leaves resemble those of the palma christi: The middle of its trunk is full of a white medullary substance, which is

very

very light, smooth, and agreeable to the eye ; so that the ladies make ornaments of it.

This plant grows more than a fathom high, and its leaves, says a famous Chinese author, resemble those of the water lily, but are more oily : there is in the middle of the trunk within a kind of wood like a reed, a very white substance, which is not so close as the flesh of a melon ; but is as smooth, and less spongy than the marrow or pith of other trees, especially that of elder. This light body is a mean betwixt wood and common pith. When these reeds are tender, they boil them, and make a syrup. The inspissated juice which approaches in consistence to soft electuaries, such as that of treacle, or turpentine, is sweet, agreeable, and if mixed with fruits, gives them a better and more exquisite taste.

Its stem is divided, says the same author, like the bamboo, by different knots, which have betwixt each two of them twigs or tubes of a foot and a half long, which are largest near the root of the plant. They cut this shrub every year, and the next it shoots out again. To preserve the pith from moisture, which is pernicious to it, you must keep it inclosed in a dry place, without which precaution it cannot be used.

Perhaps some may imagine, that the tong-tsao is the same with the papyrus which grows in marshes and ditches about the Nile, six cubits high, and from the stalk of which the ancients extracted the pith, and made a kind of liquor of it, with which they wash'd the leaves they designed to write on. It must be granted they extract from the pith of tong-tsao a kind of leaf, which at first one would mistake for paper ; but this leaf is very different from that of the papyrus, since they agree



in nothing but in this, that their woody parts are equally inflammable.

The medicinal qualities attributed to the tong-tsao, will perhaps make it be looked upon as a kind of a medullary elder tree.

If these hints could enable us to find out in Europe a shrub like to that which furnishes the Chinese with the matter of which their artificial flowers are made, it would not be difficult for an European to imitate, or even surpass the Chinese artists in this particular, since such a one would be able to apply more delicately agreeable colours to a substance that is adapted to receive them, and to preserve them in their vivacity and brightness; but this art of the Chinese deserves explanation.

The first operation of reducing these sticks of pith into leaves of a fine delicate texture, is not the work of those who make the flowers, since they are brought prepared from the province of Kiangnan, and might be taken, as I have said, for true reams of paper, cut into such a form, with a particular intention.

A piece of pith thicker or longer, as they would have the leaves broader or narrower, is put upon a plate of copper between other two plates; and at the same time that they make it slide gently with one hand between the two plates, with the other, and an instrument not unlike a shoemaker's knife, they raise off a fine surface, which separates, just as we take off with a plane thin shavings from a piece of smooth wood. What is thus taken off from the pith resembles large rolls of paper, or very fine parchment, and is made up in parcels, which the workmen use for their artificial flowers; but it must be observed, that to hinder these films or pellicules of the pith from tearing in handling them, either in painting or cutting them, they must

must be dipped in water by plunging them, and drawing them out instantly ; and this intention might be also answered by leaving them some time before the operation in a cool and moist place ; so that by means of either of these precautions, there is no fear of their breaking or separating.

There is another observation to be made upon the colours they apply ; for the Chinese painters employ none but soft colours ; which have neither gum, nor mercury, nor cerufs, nor alum, nor vitriol, in their composition. These are a sort of water colours, and consequently not the strongest. We see in the places where their workmen are employed, several little leaves to which they have given different dyes, which are, as it were, the preparation for other colours, which different painters are to apply to them, that they may represent nature. Tho' this labour, when considerable expence has been laid out on it, is delicate and valuable, yet their works are not generally sold dear, tho' more than a day is required to finish the smallest flowers with their stems and leaves. They give them the different figures they ought to have, by pressing them on the palm of the hand with instruments made for that purpose. It is with fine pincers that the workmen take hold of them, and join them with the glue called nomi, which is a kind of rice well boiled and thickened. The hearts of flowers, for example, of roses, are made of the fine filaments of flax that are delicate and coloured, and the little heads of these filaments are formed of the same substance.

The Chinese workmen give a lustre to the flowers by applying the pellicules of tong-tsao already painted on melted wax, but they must use a great deal of art and attention, that the wax be neither too hot, nor cold ; since either of these inconveni-

nences would spoil the whole work. They must likewise chuse a serene day ; because rainy weather is not proper for such performances. They have an easier method, which is to dip a pencil in melted wax, to pass it lightly over the leaf, and rub it with a linen cloth.

It is with the pith or marrow of the same tree, that they imitate perfectly fruits, the small insects which adhere to them, and especially butterflies, than which nothing can be imagined more natural. They execute their designs in the following manner: if they want to form a peach so as to resemble nature, with pieces of canes finely split they make the body of the work, which they fill with a paste composed of the sawings of that odoriferous wood, of which they make their perfume sticks, mixing with it the saw-dust of an old peach-tree, which gives the painted fruit the smell of a peach. Then they apply the skin, which consists in one or two leaves of the tong-tsao, which represent the skin of a peach much more naturally than silk, or the best prepared wax ; after which they give the proper colours and shadings.

But most commonly they take little sticks, or pieces of the pith of cane or common reeds, which they mix with strong glue, and of this make the body of the fruit ; after finishing it with the scissars, they put on a layer of odoriferous paste ; and when all is dry, they apply a leaf of paper, which they cover with the leaves of tong-tsao ; after which they paint the fruit, wax it, and make it glossy, by rubbing it with a linen cloth.

The wings of the butterflies, which are so artfully imitated, that one would take them for natural, are made by the same art as the leaves of certain flowers, and these are the butterflies, which are called in the Chinese language *yefer*, or flying leaves.

Some

Some of them have such shining colours, and are so variegated, that they may be called flying flowers; and indeed they are always produced in the finest flower gardens.

There is a lemon in China, unknown in Europe, which is much esteemed for its beauty and smell, is very sweet, and may be kept a long time. They candy it with sugar, and it is an excellent sweetmeat. Its uncommon shape makes the Chinese call it focheou, which signifies the hand of the god Fo, since it resembles the fingers when clinched. The workmen, who imitate this fruit with the pith of tong-tsao, put some wires under the matter which form the fingers, and give them the due proportion. This fruit is of a surprising figure, and is sometimes of the size of the largest lemon.

## C H A P. XXXIV.

*Situation and extent of the lesser Tartary; the authority and revenues of the kan; manners, customs, and religion of the Tartars, whether called Precops, Nogais, Circassians, or Kulmouchs.*

THE kan of the lesser Tartary is master of a large country, and is looked upon as the hereditary heir of the Turkish empire, in default of heirs male of the Osmons. Notwithstanding these pompous titles, he is but a vassal of the grand signior, who establishes, and deposes him arbitrarily, yet always shews him so much respect,

as

as never to put him to death, but only substitute a prince of the blood in his stead.

These princes of the blood of Tartary, who are called sultans, are not excluded from public affairs, and shut up like those of Turkey, since they have great places, and each his palace and equipage. The dignity of their birth procures them many friends, who are devoted to their interest and fortunes, which often produces commotions in the state, and would cause more if their sultans were rich, who indeed are commonly very indigent.

The kan himself has a small revenue for a sovereign prince, since the rents of his own lands, a part of the taxes, and some small perquisites, are very near his whole income; tho' it is true, he has not occasion to live in an expensive manner: his guard, which consists of about two thousand men, is maintained at the grand signior's expence, so that his greatest armies cost him nothing, either in levying or maintaining. The Tartars are all soldiers, and the place of rendezvous is no sooner assigned, than they come at the day appointed with arms, horses, and all provisions. The hope of booty, and the liberty of plundering, are their recompence.

The Tartars subject to the kan are called by the different names of Precops, Nogais, Circassians, and Kalmouchs. The Precopian Tartars are those who inhabit the great peninsula of *Krimea*, which was the *Chersonesus Tauricus* of the ancients. Geographers make it about seventy or eighty leagues long, and about fifty broad. Its figure nearly resembles a triangle, the base of which to the south consists of a chain of high mountains, which run eight or ten leagues high into the country. The two sides are spacious open plains,  
where

where the winds blow with uncommon violence. In all the Krimea there are not above six or seven cities, which deserve the name : Bagchsara, Kaffa, Karasou, Guelo, Orkapi, and the fortrefs of Yegnikalee : Bagchsara, the capital of the country, and the common residence of the kan, is situated in the midst of his territories, and is a city consisting of about a thousand houses, ill built and ill tenanted.

The soil, tho' naturally good, is not universally cultivated, but such parts as are taken any care of, produce excellent corn. The gardens and pasturage take up a great part of the ground, and rivulets are wanting in the plains, but are supplied by many deep wells, that plentifully supply several villages with water. The climate would be sufficiently temperate, were it not for the impetuous winds ; for in winter the raging north wind is hardly supportable.

The Precopian Tartars are of a middling stature, well made, and have very robust constitutions. They are accustomed betimes to suffer hunger and thirst, heat and cold ; they content themselves with little, when they have but little ; and when the fancy takes them, they readily run into the greatest excesses. Their language is a Turkish jargon, as ill pronounced as French by an ignorant Swiss ; and their religion is Mahometism, according to the Turkish creed.

Tho' the plurality of wives is allowed, few of them have more than one, but rather chuse to keep good horses for the purposes of war. Tho' their law forbids them to drink wine, yet they make very free with it, when they can get it, and say it is justly forbidden men of letters, and calm life, such as lawyers, clergymen, merchants, &c. but that it gives courage to the soldiers, such as they

they all are. When they have it not, they supply the want of it with a very strong and intoxicating liquor made of four milk, and fermented millet, which they call bosa. Their common food is flesh, milk, and a paste which they make of millet meal steeped in water. They eat neither roots nor pot-herbs, which, they say, are the food of beasts. Horse-flesh is a delicate repast for them, and their manner of cooking it, is to broil it a little on the coals, or if they are on a journey, to heat it under their saddles; and when they have with this a little mares milk, they think their repast delicious. The Precopians have two great faults, since they are impudent lyars, and extremely selfish. In the time of war they can raise from twenty to thirty thousand men.

The Nogais Tartars wander in the desarts, like the ancient Scythians, whose savageness and brutality they have still retained. Their country begins at the isthmus of Krimea, and extends itself over immense tracks in Europe and Asia, from the Budziak to the river Koubam, which separates them from the Circassian Tartars. The Nogais are naturally barbarous, cruel, revengeful, mischievous neighbours, and worse guests. All this is seen in the air of their countenances, which are hideous and deformed. They are born blind, and do not see for several days. Their language has not such a Mixture of the Turkish, as that of the Precopians; and they have not amongst them either villages, towns, or fixed habitations, since their houses are covered waggons, in which they transport their baggage and families. When they have a mind to stop in any part, either for the conveniency of a river, or plenty of pasturage, they pitch their tents, which are huts covered with felt, round which they make an inclosure of stakes to secure  
their

their families and flocks. They have a captain called bey; but those of Budziak are governed by a lord commissioned by the kan, and who is sometimes a sultan. Their food is milk, flesh, and bosa, in which they commit the most monstrous excesses. When a horse dies, or breaks a leg, he is a great feast for them, to which they invite their friends, and drink till they are ready to burst. It is from the Nogais the kan has the greatest number of soldiers, since they can furnish him, in case of necessity, with a hundred thousand men. Each man commonly is proprietor of four horses; that which he rides, another for a change, and to carry his provisions, and the others to carry his slaves and booty. Wo to the countries into which they come, since their marches resemble conflagrations or hurricanes; for where ever they pass they leave nothing but the earth behind them.

A particular custom of the Nogais is, that which they observe at their marriages, since some of the common relations of the bride and bridegroom divide into two companies and fight together, that they may receive some slight wounds, from whence a little blood may flow; which, according to them, is a sure presage, that the male children of the marriage will be stout warriors. It is another custom established among them, that at the birth of their children the friends and relations come to the door of the father's house, and make a great noise with pots and kettles, to fright, as they say, and scare the Devil, that he may have no power over that child.

The Nogais Tartars pay annually to the kan two thousand sheep, which they send him at three different times. At the great bairam they are obliged to wish him happy festivals, by four of their principal



principal mirzas, who are equivalent to our knights; with a present of some horses, and two birds of prey trained up for the game ; upon which occasion the kan presents each of these mirzas with a compleat suit.

The proceedings against criminals in this country are very short, since, when a Nogais has wounded one of his comrades, they send for all the neighbours of the criminal, and the relations and friends of the wounded person, to come with whips in their hands, with which they often beat the criminal, so as to leave him for dead. If the crime is murder, they put the criminal instantly to death, without the least pity ; but if it is a duel in form, and they find that every thing was done without treachery, the survivor is not punished.

In all this country we find nothing remarkable, except the remains of an ancient city, where there are several marble tombs with latin and greek inscriptions, which are now almost effaced. There is a sort of fortification near the river, which comes from the neighbourhood of Azak, where they have a guard to watch the motions of the Cossacks, and hinder them from invading their country by surprise.

Their tents are something like windmills, and their chimney is so contrived as to turn with the wind, that they may not be incommoded by the smoke. The tent of a mirza is distinguished from others by a sabre, painted near the top of the chimney. When they celebrate a festival or marriage, they kill a horse, make a hash of the flesh, and serve the head up intire. If there is in the company a distinguished person, they present him with the fattest intestine of the horse, which is esteemed a great delicacy. In their journies they carry with them some of these entrails dried and  
smoked,

smoked, to regale those who distinguish themselves in battle, or gain the greatest booty, which they never fail of dividing in equal portions.

These tartars can bear hunger five or six days, and their horses can do the same. They often undertake journies of three months, without carrying any provision with them, relying upon what chance may furnish them with.

There are no mountains in their country, but spacious plains, watered by some rivers, whose banks they cultivate, in order to sow their millet. When they are marching to attack a city, they say they smell the air of it above two leagues off, because that which they breathe in the open fields is infinitely more pure.

In time of war they are obliged to furnish the kan with forty thousand men; but they always supply him with sixty thousand, not being able to live but by the booty they make on the lands of enemies or neighbours.

The gentlemen carry always a bird on their hand, and there is nothing that can force them to do an action inconsistent with their nobility, which however they have no knowledge of, but by oral tradition.

These are the maxims of those who go to war. They look upon every thirteenth year as unhappy, for which reason a Nogais does not go to war till he is fourteen years of age; nor does he enter the field of battle in the twenty-sixth and thirty-ninth years of his age, nor do they carry about with them in these years any arms, which, say they, would prove fatal to the bearer. They pretend to have had this revelation from one of their prophets; and they affirm that none of their warriors ever returned, who went to war in those unhappy years, which they generally spend in fastings and prayer. On these occasions

occasions they are forbidden to contract marriage, or bear about them the weight of a pound. But this climacteric year being over, they make a great feast for their friends and relations, in which they intoxicate themselves with their bosa, which is made of fermented millet, and is as strong as brandy.

The Nogais have neither corn nor wine, nor salt, nor oil, nor spices; and the millet of the country, and milk of their cattle, is their common food. They have oxen, sheep, and wild fowl, but are so senseless as to boil their milk till it becomes hard as a stone; after which they make balls of it, and dry them in the sun, and when they want to use them, they dilute them in water, and compose a drink, which is delicious to them in hot weather.

The Circassian Tartars inhabit Adda, which is bounded on the north by the Nogais, on the south by the black sea, on the east by Georgia, and on the west by the Cimmerian Bosphorus, and the gulph that separates them from the Krimea; and upon this gulph there is a sea-port of great trade, called Taman, from which they export skins, honey, wax, and other commodities. The taxes are paid, one half to the grand signior, and the other to the kan, each of whom has three per cent.

The mountain Circassians live in woods, and are not so sociable as the rest; but those who live in the plains have villages, and some small cities on the borders of the red sea, where there is a trade carried on. The beys, or lords who govern them, deal in the sale of their vassals, and fathers and mothers in that of their children. The Circassians are reckoned better hunters than warriors; and it may be said of them in general, that they are the least disposed to war of any of the Tartar nations.

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One side of Circassia is full of high hills, and deep vallies, shaded by a number of large trees. The capital of this canton is Kabartha, from which the kan of Krimea draws his greatest revenues in slaves, and every one who sees the country allows it to be extremely beautiful. None are remarkably pitted with the small pox, by the method of taking care of their children in their infancy.

There is a bey who commands in this country, under the authority of the kan, who has several officers under him, and these are obliged to give as a tribute to the kan three hundred slaves, namely, two hundred girls, and an hundred boys, who are not above twenty years old. Very often the beys give their own children, the more easily to induce the parents to deliver up theirs.

When the Circassian beys are at variance, they send to the kan for an aga, and sometimes for a prince of the blood, to determine their differences; and these commissaries never return without rewards; and they make them presents of the best and most valuable things they have; and we may say, that in Circassia they make a traffic of men and women as they do in other places of different commodities.

The Circassian Tartars live better than the Nogais, since they daily eat beef, mutton, wild fowl, and very rarely horse flesh. Their bread differs something from that of the Nogais, since it is made of millet-meal, kneaded with water, of which they make a soft paste, which they half bake in earthen moulds, and eat very hot.

The country is fine, and abounds with fruit-trees; and tho' uncultivated, is yet watered with charming rivulets. The air is very good and wholesome, which is no doubt the reason why the Circas-

fian women have a degree of beauty far superior to the other Tartars.

These people greatly esteem christians, and say they are descended from some Genoese, who long possessed the principal part of this great country, and shew in several places the ruins of the cities they had built. The Circassian beys are generally Mahometans, and only accept the place out of complaisance to the Tartars, with whom they have continual connexions. As for the people, they are neither christians nor mahometans, and neither use baptism nor circumcision. They have a particular language quite different from the rest of the Tartars, which, however, seems to have a great sweetness. There are no exercises of religion amongst them, but certain superstitious assemblies, which are held at stated times, beneath large trees, to which they tie wax candles, while he who is their papas or priest, makes at their head three or four turns round the tree, muttering some prayers, on which occasion they generally eat hogs flesh openly, and without reserve.

The Circassians, who are so beautiful, have for neighbours the Calmouchs, who are such monsters in nature, that when one looks at their face, he knows not of what colour to call it, nor where their eyes or noses are. As a part of these Calmouchs are tributary to the kan, and the others to the czar, they are obliged yearly at the grand bairam, to send a deputation to the kan of Krimea, with him a happy festival, and send him their tribute, which consists in two covered chariots, one drawn by four horses, and the other by two camels, in which are two furs of sable, one for the prince, and the other for the sultana his mother, or the chief of his wives. They also give furs of the  
same

same kind to the first princes of the blood, whether sons or brothers of the kan, as well as to his first vizir, and the musti.

The head of the deputation is one of the principal Calmouchs, and when they are at the entrance of the isthmus of Krimea, they give notice to the kan of their arrival. The little city built on that neck of land, which joins the Krimea to the continent, is in French called *Porte-or*, and in the Turkish language *Orkapi*. When the kan receives the news of their arrival at *Orkapi*, he sends a courier with orders for them to enter, and money to defray their expence to the capital; after which they have an audience the second day, and then the *kiaia* of the vizir goes to their lodgings, and conducts them to the palace with their presents. They give them the *kaftan*, or robe of honour; then two *kapigis-bachis* taking each of them by the arm, conduct them in that manner to the apartment of the kan, where they fall prostrate, and kiss the hem of his garment. The kan tells them they are welcome, upon which the chief deputy assures him of the fidelity of the Calmouchs, and offers him their presents. Soon after they go to the apartments of the vizir, where they are regaled with coffee, *shirbet*, and perfumes, according to the custom of the Turks. The kan during their stay at *Bagchsaray*, gives them a daily subsistence of bread, meat, fowls, spices, butter, wood, and oats, and straw for their horses; and gives them suits of cloth cloaths at their audience of leave.

The kans of Tartary take the name of *Guirai*, on the following account. About two centuries ago, when the inhabitants of the Lesser Tartary were so deeply involved in civil wars, that all their princes perished, except one of ten years of age,

whom a labourer called Guirai, saved out of compassion. The Tartars separated into several factions, and the war became long and bloody, but being at last weary of it, and not being able to agree about a prince, they consented, that if they could find one of the race of their kans, they would place him on the throne, upon which Guirai presented the young prince, who was then eighteen years old, and was known by several indubitable marks. The Tartars obeyed him, the public peace was restored, and the young kan willing to shew his gratitude to his foster-father, and deliverer, made him be sent for, and asked him what favour he desired ; upon which the labourer replied, that riches and employments were not what he wanted, that having still a sense of honour, he desired he would take his name, and oblige his descendants to use it ; since which time the Tartar princes join Guirai to the name, which they receive in circumcision.

## C H A P. XXXV.

*The course of the Ganges ; the opinion which the Indians have of this river ; description of the island of Ceylan ; of the names of the Mogul emperors ; of the famous pagod of Cachi ; of Pondicheri ; of St. Thomas ; of Golconda ; of Madura ; and some other principal cities of the Indies.*

THE East Indies are divided naturally by that chain of mountains of Gata, which extend from the extremity of the south-sea, to the most northern part. They begin at Cape Comorin, and terminate at Mount Ima. As the river Indus was the most known by ancient geographers, they have called by this name all the people who lived beyond this river, as far as the Eastern sea ; and because Delhi has been long the residence of the sovereigns, it has been looked upon as the capital of the Indies, and at this day they give the name of Indostan to this vast country, which lies between the Indus and the Ganges.

We cannot say in what part the Indus first begins. It is in the country of Cachemira, if we believe some Indians, but others place it higher among the mountains of Ima. It takes its course towards the south as the Ganges ; with this difference, that the Ganges inclines a little to the east, and the Indus on the contrary to the west, and the last disembogues itself into the Indian sea, by several mouths.



The Ganges is the largest, and the most famous river of all Asia, and its source, according to the opinion of the Indians, is celestial, since they say one of their gods pours it from his mouth on mount Ima; from whence passing over many states, and directing its course to the south, it waters many great cities, the most famous of which is, say the Indians, Cachi; then it passes into the kingdom of Bengal, and throws itself into the sea by several mouths.

If we may believe the Indians, the Ganges is a holy river, whose virtue consists in washing away sins. Those who are so happy as to die on its banks, are admitted into a delicious region, where they continue, till their souls animate other bodies; it is for this reason that they throw so many dead carcases into this river; that the sick order themselves to be transported to the Ganges, and that others who are too far distant, carefully inclose in urns the ashes of burnt bodies, and send them to be cast into the river.

This general esteem which they have all over the Indies for the Ganges, is of great benefit to the priests, who fill bamboos with the water of it, which they fix to the two extremities of a pole seven or eight feet long, and, putting it on their shoulders, carry it all over the Indies, and sell this salutary water very dear, which they pretend is not subject to corruption. This high idea the Indians entertain of the Ganges, arises from the persuasion they have with most idolaters, that great rivers are the abodes of some god or goddess; besides, it is certain, that the Indians have heard of the terrestrial paradise, of the river that watered it, and of the tree of life; and it is probable, that not knowing any finer river than the Ganges, they have attributed to it what they have heard of that river. With this  
know-

knowledge of the terrestrial paradise, which they have received by tradition from their forefathers, they have intermixed many fables agreeable to their own taste ; for example, that the Ganges runs through a delightful garden, whose fruit restores youth to those who eat of it, and adds a century to their life ; so that whosoever should be so happy as at the end of each century to find some of this fruit on the banks of the Ganges, might be ascertained of an immortal life. They add as a certain fact, that they have known some who have lived three hundred years, because, say they, they had found some of this fruit at the end of each century ; but not being so lucky as to find any at the beginning of the fourth, they instantly died.

After the description of the Indus and Ganges, let us now proceed to the most remarkable places, which are on the banks of the Indus, beginning with the famous island of Ceylan. The king of Portugal having one day asked an officer just come from the Indies, an account of this island, was answered, that it was an island whose surrounding seas were sown with pearls, whose woods were cinnamon, its mountains covered with rubies, its caverns full of crystal ; and, in a word, the place which God chose for the terrestrial paradise. This description is certainly exaggerated, tho' it cannot be denied but it is the most beautiful island in the world. The Indians call it Cachi, and all the idolaters of Asia look upon it as the abode of their gods. The famous Ramen, the chief of the Indian gods, according to them, resided there ; and the Pegouans affirm, that Anouman, a famous ape which they worship, accompanied Vichnou thither, who was metamorphosed into Ramen. The Siamese affirm, that their god Somonacodon

has left the print of one of his feet in it ; and the Chinese themselves, who are not willing to be indebted for any thing to strangers, acknowledge that one of their principal idols came from Ceylan, which is an island about two hundred leagues in circumference, watered by a number of fine rivers, and blest with plentiful harvests.

Pondicheri is the largest establishment the French have in the Indies, since it has a regular fortress, where none of the works necessary for a good defence are wanting. The city is spacious, the streets parallel, and the houses, instead of being built like those of Europe, are but earth covered with lime ; but as they compose strait streets they have an agreeable appearance. In some of the streets are fine avenues of trees, under whose shade the weavers work those fine cottons so much esteemed in Europe. The difference of time betwixt the meridian of Pondicheri and Paris is five hours, and eleven or twelve minutes, which are equal to about seventy-eight degrees.

In going from Pondicheri to the north, following the coast; we see the city of St. Thomas, also called Meliapam, or to use the Indian name, Mailabouram ; that is to say, the city of peacocks, because the former princes of this country had a peacock for arms, and had it painted on their colours. It is probably in imitation of the emperors of Bijnagar, that the Mogul emperors place so beautiful and rich a peacock on the canopy of their throne, the platform of which is all covered with pearls and diamonds, and surrounded with a fringe of pearls. Above the canopy is a peacock, whose expanded tail is of sapphires, and other precious stones ; the body is of gold enamelled with jewels ; and in a word, there is a large ruby in the middle of the breast, from whence hangs a  
pearl

pearl in form of a pear, which weighs fifty carats.

The Indians do not speak less pompously of Cachi, than of the Ganges, since the former, according to them, is the abode of their gods, and by consequence, a sacred and holy place. Ramen, and the most celebrated hermits, performed their penances in the woods near the Cachi; and whoever dies in so holy a place, has all his sins pardoned, and goes directly to heaven; a man who has made a journey to Cachi, is revered upon that account, tho' he has no other merit, the want of which is supplied by having been there. In a word, they complain, that they have not expressions sublime enough to represent, as they ought, the sanctity of so venerable a place.

As for Cachi, which certainly is the same as Banares, it is one of the best built cities in the Indies. Almost all the houses are of free-stone, or bricks, and there are very beautiful caravanferas; but the streets are narrow. The Ganges washes the walls of this city, whose situation is fine, and the country round about delightful and fertile. From the temple-gate to the Ganges are several stone stairs, with platforms between each of them. This description is agreeable to that which the Indians give us of the pagod of Cachi, which proves that Banares and Cachi are the same.

The city now called Golconda, was formerly only a garden of a pleasant situation, two leagues from the fortress of that name. They called it at first Bagnagar, and afterwards Golconda, which is very near as large as Orleans, well situated, and adorned with beautiful streets. The river which runs thro' it, and throws itself into the sea of Masulipatan, is broad and clear, over which they have built a magnificent bridge, and the palace is  
very

very sumptuous. Since this city is become subject to the Mogul, it is not so well peopled as before; for Auren-zeb pillaged it entirely, before he took the citadel; and it is in this kingdom of Golconda, that we meet with the famous diamond mine.

Madura is the capital of the kingdom of this name, and is surrounded by two walls, each of which is fortified after the ancient manner, with several square turrets with parapets, and furnished with cannon. The fortress, which is square, is surrounded with a large deep ditch, a scarp, and counterscarp. There are no covered ways to the scarp; and instead of a glacis there are four fine streets, which front the sides of the fortress. One may walk round it easily in two hours; and the houses of the streets have large gardens on the country's side, which is fine and fertile.

The inside of the fortress is divided into four parts; and those on the east and south contain the king's palace, which is a labyrinth of streets, ponds, woods, halls, galleries, colonnades, and several houses placed here and there; so that when we have once entered it, it is not easy to find the way out. When the kings of Madura resided here, there were none in it, but women and eunuchs, and the famous Troumoulanaiken, who contributed most to the embellishments of it, had a seraglio in this palace, whose halls of audience were superb and grand.

At the entrance was a great gallery, supported by twenty large pillars of black marble well wrought. From thence we passed into a spacious court, where we saw the four sides of the building, which corresponded to the four quarters of the world. Each side of the building had in the midst a very elevated dome, ornamented with works of sculpture, and these domes were joined by  
eight

eight galleries, whose angles were flanked with turrets. The plan of this palace had been drawn by an European ; for we see in it many European ornaments mixed with Indian architecture.

In the second part of the fortress is the temple of Chokanadon, which is the idol worshipped at Madura. To the east of the pagod are many beautiful porticos, and to the north of one of these is seen a magnificent chariot designed to carry the idol in triumph on his festival day. The pagod is surrounded with three walls, between each of which are many fine avenues, very smooth, well gravelled, and adorned on each side with rows of lofty trees. There are four great towers at the entrance of the principal gates of the palace, and the rest of the ground within the fortress, is divided into several streets, ponds, and public squares.

The river which runs by Madura would be beautiful, if it was not drawn off into great lakes, which drain it, and reduce it to a rivulet. Below the city there is a canal which runs from north to south, and throws itself into five beautiful ponds on the west of Madura, which have other canals for conveying the water into the ditches.

To the east of the fortress we see three other triumphal chariots, which are magnificent when adorned. The greatest cannot be drawn, as the Indians say, but by several thousand persons ; which is no wonder, considering the enormous bulk of this machine, which carries four hundred persons at least, whose offices are different. With large beams they form five stories, each of which has several galleries ; and when this machine is covered with painted stuffs, silks of different colours, streamers, standards, umbrellas, festoons of flowers, representing different figures ; and when all this is  
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seen in the midst of the night, by the light of a thousand flambeaus, it cannot be denied to be a very agreeable spectacle. The drums, trumpets, hautboys, and several other instruments, accompany the motion of this chariot, which is so slow, that they are three days in drawing it round the fortrefs.

On the north side, above the fortrefs, in the street that runs east and west, were formerly the Christian churches, which were overthrown when the city was taken and ruined entirely by the king of Mayssur.

Madura has lost much of its ancient splendor, since the irruptions of the Mayssurians, and since the last kings have removed their court to Trichirapali, which is a large well peopled city, and contains above three hundred thousand inhabitants. It is the greatest fort between cape Comorin and Golconda, so that numerous armies have often besieged it, and always in vain; for which reason the Indians say it is impregnable. It has a double inclosure of walls, each fortified with sixty square turrets, distant from each other about eighty or a hundred paces. The second inclosure is more elevated than the former; and is furnished with a hundred and thirty pieces of cannon, of a pretty large bore; this second inclosure is still divided into two fortresses, which are called therefore the north and south; the latter of which has its internal walls lower than the other; and there is an eminence from whence they can discover an enemy, towards the midst of which is the arsenal, and at the bottom the prince's palace. The inside of this fortrefs is very agreeable, and consists of a great square amphitheatre, with stairs on all sides to ascend to the ramparts. Besides the turrets on the double inclosure, there  
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are eighteen larger, wherein they lay up the provisions and ammunition of war, which cannot be lodged in the arsenal. They renew yearly the rice provision; what is taken from the stores is given to the soldiers as part of their pay, and the garrison consists of about six thousand men, and sometimes more.

The ditch which surrounds the fortress is large, deep, full of water, and abounds with crocodiles. Trichirapali has four large gates, two of which are only left open, and that towards the west is only free to women belonging to the palace. Every night they patrol three times in the palace; the first with the sound of drums and trumpets, towards the evening; the next about nine o'clock, with hautboys and other instruments; the third in silence, about midnight; and sometimes they make a fourth about three in the morning.

The palace of Trichirapali is far from being so magnificent as that of Madura, and only consists in a heap of halls, galleries, and chambers. The divan, or tribunal of justice, is supported by fine high pillars, contrary to the custom of the Indians; and above it there is a fine platform. The gardens are very magnificent; for we see in them four or five little fountains, and at the entrance a great hall, open on all sides, and surrounded with deep ditches, which are filled with water when the queen comes to enjoy the fresh air, on which occasion the pillars which support the hall are covered with gold, and the roof ornamented with festoons of flowers, and pieces of damask of different colours.



## C H A P. XXXVI.

*The manner of inoculating the small-pox among the Chinese; rules to be observed for that purpose; remedies used in this artificial pock; a particular secret to remove or mitigate the small-pox.*

WE, perhaps, shall not be a little surprized to find that a method very like that which was brought from Constantinople into England, should have been in use for above a century in China. It may be asked, whether it was in this empire that this invention had its birth, or in some neighbouring kingdom? If the English are to be believed, the Greeks of Constantinople got this secret from the countries adjoining to the Caspian sea, which might induce us to believe, that China had it from the same source, by means of the caravans of the Armenian and other merchants, who have for many years traded to China. Yet this conjecture will equally prove, that it was from China that this secret came to the Caspian shore.

But what proves that this invention was not brought from Tartary to China is, that the Tartars have hitherto been intirely ignorant of the method of inoculating, and making thereby the small-pox milder and safer. They look on this disease as a kind of plague; and as soon as any of them get it, he is abandoned by all, and has nothing to trust to but providence and his constitution.

Whatever we may conjecture, none can disallow but the Chinese receipts about inoculation may be of great advantage; the first of which is as follows:

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When you have found a child from one to seven years of age, whose pock came out happily, without any malignant signs, who had them distinct, and was well on the thirteenth and fourteenth day, so that the scales of the pustules fell off; gather up the scales or pellicules of the dried pustules; put them in a China vessel, whose mouth you must carefully close with wax, by which means you may preserve their efficacy many years, which would evaporate in one hundred days, was there the least opening in the vessel.

It is supposed that the child to be inoculated is in a good state of health, and is, at least, a year old. If the preserved scales be small, take four; if they are large two are sufficient, and mix a grain of musk in such a manner, that the musk may lie between the two scales, which press it; and the whole must be put into a piece of cotton, wrapped up in form of a tent, which is to be put into the nose; and you must fill the left nostril, if it is a boy, and the right if it is a girl.

We must observe whether the child has the frontal suture closed; for if it is not consolidated, or the child has a flux, or any other disorder, it is not proper to inoculate him.

When this remedy is put into the nose, and a fever comes on, if the pustules appear not till the third day, we may reckon, that of ten children, eight or nine will do well. But should they come out the second day, one half will be in great danger, and should the pustules make their appearance the first day of the fever, then the physician cannot answer for the life of the patient.

For what remains with respect to the use of this remedy, we must conduct ourselves as in the natural small-pox, and only once use expellent medicines,

cines, and then give the patient potions and fortifying cordials.

This recipe contains circumstances of more importance in practice, than at first appears. First, they chuse the pock of the youngest children for the seed to be inoculated; because they judge it is freest from heterogeneous malignity, and that its virus is not too strong for the designed operation. They also judge that the pustules of the distinct kind are better nourished, of a milder quality, just as it happens to fruits which are left in small numbers on a tree. As for the musk it seems a meer vehicle; tho' as it is very spirituous, the morbid seeds with which it is mixed insinuate more easily. They have probably considered that good musk strengthens the head and heart; and by its heat opens the pores of the vessels; which has laid a foundation for saying, that being smelled to fasting, it causes bleeding at the nose. But we now proceed to the second prescription.

To succeed in inoculating, we must chuse the scales of the best conditioned pock. These recent scales stand in need of a preparation to correct their acrimony: they cut in little slices the root of scorzonera, to which they add a little liquorish, which they put into a china cup full of hot water. They then cover this cup with fine gauze, over which they hold for some time the pocky scales, exposed to the benign heat of this composition. After this they remove and dry them, and then they have their proper force. The scales that have been laid up for a month or two have no need of this preparation, since it is sufficient to temper them by the gentle perspiration of a healthy man, who carries them about with him for some time before they are made use of.

We must observe that scales taken from the trunk of the body, whether on the breast, or on the back, are the best ; and that we must guard against using those which are taken from the head, the face, the feet, or hands.

When we would give the small-pox without incision, we must take the down of a silkworm's egg, and put into it a sufficient quantity of scales ; then put it into the left nostril, if it be a boy, and into the right nostril, if it be a girl, and leave it there three hours. There is another method of making a thick mixture with pulverized crusts, by mixing them with a little warm water. They inclose this paste in a thin piece of cotton, which they put into the child's nose, and leave it for six hours, by which means the fever will soon succeed ; and on the sixth day the marks of the small-pox will begin, and the pustules will dry, and fall at the end of twelve days. To mix these crusts in water, we must use a stick of mulberry wood.

There are six cases, in which we must not inoculate. 1st, If the child be under the age of a year. 2dly, Should it be a young man past sixteen. 3dly, If the person has at that time any external disorder. 4thly, If he has inwardly an ailment. 5thly, During the summer, and great heats, we must not venture. 6thly, When the pocky seed is not of a favourable kind.

It is probably with a great deal of reason that they caution us against inoculating in summer, but chuse those seasons of the year when the vital spirits are less dissipated, and more concentrated, on which occasion nature acts better, provided she is fortified against the external cold ; which it is far more easy to guard against than it would be in summer, to give precisely the degree of strength requisite.

In both these methods, they judge it dangerous; for the small-pox to come out too soon; but this danger is common to them with the natural small-pox. A premature effort of nature is the cause that her forces are never totally reunited; as it happens in demicrises, which being reiterated, save not the sick person as a perfect crisis does. The matter which is not prepared, being pushed betwixt the flesh and skin, cannot be there sufficiently concocted, just as the aliments which fall into the stomach, before the first digestion has been performed in the mouth by mastication, and that dissolution which is effected by the saliva. Thus these acids entering into the blood, are never thoroughly expelled from it, and produce the most uncommon symptoms.

The last receipt comprehends the rules which we are to observe, in inoculating.

1st, It is necessary that the child, whom they want to inoculate, should be healthy, robust, and free from all distempers.

2dly, They must take care, that the sagittal suture be perfectly united and closed; wherefore care should be taken in general, that children be three years old, at least, before they are inoculated; and it is an experiment which should not be made, when they are past seven.

3dly, The child must be free from internal and habitual infirmities; have, on no part of his body, either itch, impostume, tetters, nor even the least ebullitions of blood; and, in a word, he must not have the smallest symptom of a flux.

4thly, We must refrain from inoculation, when a child frequently casts his eyes on one side, as if he squinted; when he is dull of hearing, much more when he is totally deaf; when his nostrils are stop'd, or when he makes water with difficulty.

5thly,

5thly, Inoculation would be an useless attempt, if the child had large eyes, without the caruncles which are situate in their corners, or if he had the hircus (that part of the eye next the temple) very pointed, and not round, as the generality of men have.

6thly, The seasons of great heat, or excessive cold, would be prejudicial to this operation, as likewise those times, when any epidemical distemper rages, or when the weather is irregular, either in respect of dryness, humidity, or cloudiness.

When we have observed, that the child has all the necessary dispositions, we must prepare him by a potion proper to dissipate malignant humours, and purify the blood and juices; and it must be at least ten or twelve days after the use of this remedy, before we undertake inoculation. The remedy is composed in the following manner:

We must take red, black, and green peas, and liquorish, of each an ounce, and reduce all to powder, which we must put into a tube of bamboo, or elder, whose bark is peeled off, leaving the knot on each end. We must fill this tube with the medicinal powder, and close the two openings with wedges of fir, over which we must put a thick covering of wax, that the least aperture may not remain at the extremities of the tube: all being thus disposed during winter, we must hang this tube in a vault or necessary-house, where it must remain for fourteen months. After we have cleaned the outside, we must add to one ounce of this mixture dried in the shade, three mas (a mas is the tenth part of an ounce) of the flower mæiste, which is a wild apricot, that flowers in winter; and there are some of them which have only flowers, but we must not with our fingers gather

these leaves, when they are fallen upon the snow; but must take them up on the point of a needle, lay them on paper, and expose them to the heat of a clear fire to dry them entirely; and when they are so, they must be reduced to a very fine powder, and mix'd with the other powder, which is to be exhibited in the following manner: The dose is a mas, or half a mas, in proportion to the child's age; and they must dilute this powder in a portion of water, wherein they boil the creeping stalks of the long, slender, and downy gourd; and when these stalks cannot be had, we may in their stead use the flowers of xirinhoa.

When they give this remedy, all food must be forbidden, that is of too pungent and acrimonious a taste or smell. Ten or twelve days after we may inoculate; and for this purpose, must chuse in a good season, a young, robust child, who has a pock that is well conditioned, and not too close, we must collect the thickest scales of these pustules, and shut them up close in a vessel, so that the spirits may not evaporate, after which precaution, they may serve during a whole year, without losing their efficacy.

When we would inoculate the small-pox, we must take five or six of these scales; tho' if the child is a little advanced in age, we join two grains of hiunghoang, and pounding them together, wrap them up in a piece of cotton, which is to be put into the nose of the child, and left two or three days; after which the small-pox will break out; but if the child is very young, two or three scales are sufficient; and we must proportionably retrench the quantity of musk, and hiunghoang. The second day after inoculation, they make the child take a dose of two or three pulverized scales, which are to be put into a broth of chinma, which  
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is so called because the chinma prevails ; but it is not the only ingredient, since with the scales they also boil kotem, choyo, and liquorice. When this potion, which must be a pretty large dose, is ready to boil, they throw into it the powder of two or three scales. After which they wait for the effect of the remedy ; and if, after the third day, we see the marks of the small-pox, it is a good omen.

Should the small-pox appear on the second day, there is danger ; and this danger would be greater, should they appear the first day. This is what they say ; but we need not be discouraged, since by observing the method which we prescribe, and taking the remedy which dissipates the malignity of the humours, there will be no great fear of the accidents and symptoms above mentioned. We must then have recourse to the remedies, which they employ for the natural small-pox, when they are dangerous.

In a word, they desire, that if, after the use of these remedies the small-pox does not appear, neither on the fourth nor fifth day, we must remove the powders put into the nose of the child, and have recourse again to the remedies prescribed for abating the malignity of the venom. By this precaution they affirm, that the child will afterwards be proof against the small-pox. We must only in the fourth and fifth moon give this medicine for some days successively, and the child will be freed from danger after he is ten years old.

The Chinese physicians agree, that artificial small-pox are of the same kind with the natural ; that they are subject to the same symptoms ; that the venom comes out at the same time ; that is, on the third or fourth day, and not on the seventh, as it happens in purple fevers ; that the pustules are



similar in figure, the quality of the matter, and in the time requisite for its maturation. They do not, like some of the authors who have wrote on the Greek method of inoculation, affirm, that the artificial pustules are not proper for seed, and the propagation of other pox; and it is for this reason, that physicians do not chuse to inoculate those, who would inevitably be in danger from the natural pox, such as persons considerably advanced in years.

We must, no doubt, have observed, that the Chinese are very circumspect in using expellent remedies, for fear of disturbing nature, which is in a kind of crisis during the first days of the morbid fermentation; and the principal care ought to consist in using remedies which resist the corruption of the blood, which would otherwise be produced by the too great activity of the introduced virus. It is also to be observed, that they advise us to use, according to the necessities of the artificial, all the remedies used in the course of the natural small-pox.

The same author gives us the two following receipts, which the Chinese say are not only proper to prevent the troublesome symptoms of the small-pox, but likewise to preserve us from them all our lives; and these receipts serve to illustrate what was said in the last paragraph upon the artificial pox.

When the small-pox begin to spread in a place, regulate the eating and drinking of the children, let them not go abroad, take care that they be conveniently clothed, and give them some gentle preservatives.

Take, says he, a cup of red, one of black, and another of green peas, with two ounces of liquorice, which you must reduce to fine powder, and then put these four ingredients into an earthen pot,  
and

and boil them till they form a kind of paste, which you must make the child eat. The red peas drive from the heart all the peccant matter, the black are good against the malignity of the kidneys, and the green against that of the stomach.

Other physicians, as well as the last mentioned, highly extol the following recipe.

Take, say they, seven eggs of a hen that is ready to sit: Take one of them, pierce it to make the white and yolk flow out; then fill it with four mas and nine condorins of very fine tchucha, a kind of cinabar, (an ounce contains ten mas, and the mas ten condorins) paste paper on the hole, and stop it well up. You must put this egg under the hen, to be sat on with the six others. When the others are hatched you must take away the medicinal egg, from which you must take out the tchucha, which you must expose to a clear sun and moon during seven or eight days and nights; besides, you must take the best and ripest gourd, and dry it, and when you have burnt it, without calcination, you must reduce it to powder; for each dose mix five condorins of tchucha, and as much of gourd powder, with a sufficient quantity of pure honey, which medicine must be taken three times successively, and is an excellent preservative.

They likewise use another remedy as agreeable to the palate, as proper to prevent and remove the disorder, and this is the frequent use of Corinthian grapes, which the Chinese call *soso poutao*.

Perhaps the Chinese method of procuring the small-pox is milder and safer than that of England, which is performed by way of insertion. The latter immediately conveys the virus to the mass of blood, whereas in the Chinese practice, subtle spirits, and those tempered, or assisted,

insinuate themselves by the olfactory nerves, or such as digestion prepares in different passages. The pocky virus has without doubt a kind of malignity ; but whether it be cold or hot, thick or subtile, it must be more dangerous when it is inserted into the flesh than when it is insinuated by respiration, or deglutition. The venom of vipers or toads, swallow'd or smelt at a long time, does not hurt at all, or at least much less than if it was introduced by incision, since every one knows that the slightest bite of a serpent proves mortal.

In the management of those in whom we produce the small-pox, we must have recourse to the method observed in the natural pox. Except in venesection, which is not used among the Chinese, there is a great analogy betwixt their method and that of the Europeans.

The reader will not perhaps be displeased, that in the excretion of the small-pox, they use peas, or little beans. There is a probability that they use them to temper the too great acrimony of the blood and humours ; and what confirms this is, that the Chinese physicians, when the fever continues without the appearance of the small-pox, put in their common remedies a little opium, which has the virtue of uniting the spirits, and giving them the strength of expelling the venom.

We must observe that the Chinese authors who treat of the small-pox, speak of it as a distemper known in the earliest ages, since, notwithstanding the silence of Hippocrates and Galen, we cannot doubt of its antiquity. When they investigate the cause of so common and so universal a disorder, they pretend that the infant brings the principles of it with him into the world from the mother's womb, which occasional causes augment, retard, or intirely destroy. But how can it happen that  
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the small portion of matter which causes the small-pox, and which commonly the first time one is infected, is exhausted intirely, and secures us from a second attack, notwithstanding external causes, and our approaching such as are covered with them, should remain so many years in the mass of blood, or in any other parts, and this in youth, which is susceptible of the slightest impressions; that in process of time this matter is neither attenuated nor dissipated, even after burning fevers, and violent crises, which must have renewed the humours, the alcalies, the acids, the sulphurs of the blood, and all the principles of life and health, from whence arises, as it were, a new constitution? Nothing is found in the Chinese writers which has the least tendency to illustrate this difficulty.

However, what we have said touching the Chinese method of procuring the small-pox, shews sufficiently that the knowledge of distempers and their remedies have not been so neglected in China as some in Europe perhaps imagine.

We now proceed to give an explication of the different drugs in the preceding receipts, which cannot be better known than by a Chinese treatise, of which the following is a faithful translation.

The plant chirma buds in the spring, and rises three or four feet high. Its leaves, which are of an obscure black, resemble those of that hemp which is called tchama, and a kind of flax called hongma.

In the fourth or fifth moon, and at the end of the sixth, the plant produces a black seed, and its root is like that of hao, which is a kind of wormwood; it is blackish, and the only part employed in medicine. As its virtue is sudorific, they think it good against poison, the corruption  
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of the air, the external incommodities produced by heat or cold, and in general against all kinds of impostumes.

Koken, that is to say, the root of the ko, is the external pellicule of this creeping plant, which is taken off in long shreds, and serves to make the stuff kopon. The root is medicinal, and they make use of it to cure calentures, violent head aches, and great colds; in order to procure sweats, to resist poison, and generally for all kinds of distempers caused in children, by an excessive heat of the blood.

Tchi-tiao-teou, are little crimson peas, the green and black are sufficiently known, and the red or crimson ones are sown after the summer solstice. Their leaves and flowers are intirely like those of kia-teou, that is to say, peas with strait cods, and about a foot long. These tchi-teou have an external covering like green peas, but something larger. They eat them either boil'd in water, fry'd, or reduc'd to a kind of broth: they also use them in medicine, and chuse the smallest, which are of a faint crimson. They dissipate the dropsy, dissolve impostumes, and extravasated blood, and are of great use in contagious distempers.

The root of choyo, or piony, is used against impurities of the blood, or distempers produced by a redundancy of humours, and is also thought proper to dissipate either close or open cancers, to stop dysenteries, or tenesmus, and to cure the inconveniencies which precede or follow child-birth.

Kin-in-hoao, a gilded or silver'd flower, is the honey-suckle, which is found every where. The plant which bears this flower, does not wither in winter; they therefore call it gimtomtem, the plant that bears winter. It attaches itself to  
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the neighbouring trees, and begins to twist itself on the left side of the trunk. The stem is something of a violet colour. The leaves come out from each knot, and are downy, and sharp. The flowers which blow the third or fourth moon, are a finger's breadth, fix'd by twos to the same pedestal, and each consisting of two leaves, the one greater and the other less ; they are at first white ; after two or three months they become yellow ; and as these white and yellow flowers cause an agreeable variety, as they come out sooner or later, they call them golden and silver flowers. They use them with success in abscesses, cancers, ulcers, impostumes, when the blood is heated : in short, to resist every kind of poison, and internal malignity.

Tchucha is a kind of mineral, perhaps the cinabar of Dioscorides, so rarely to be met with. The best comes from the city of Chienteou, in the province of Houquang, where it is found in the mines, and is full of mercury. They affirm likewise, that from a pound of tchucha they can extract half a pound of mercury ; but the tchucha is too expensive for this purpose. The large pieces are dear, and when kept long lose nothing of their strength and colour. It is ranked amongst internal remedies, and for this end reduced to a fine powder ; and in the lotion they take nothing but what the water, when agitated, raises up and supports. It is an excellent cordial, which restores the spirits, and all the parts to a state of health and vigour. They use it in summer, to make a cooling drink, and it is particularly assisting in the convulsions, and other disorders of children.

Hiung-hoang, another mineral, is a species of orpiment, furnished by all those mines wherein there is sulphur, lead, iron, or other metals. The coarsest,

coardest, which they never use, contains pieces of iron and gravel. The lump, which is cut into large parts, sometimes, tho' very rarely, contains a diamond. In physick they use the most transparent hiung-hoang against the bites of serpents and other venomous insects; and have recourse to it in malignant distempers, as well as epidemical, either to cure or preserve themselves.

## C H A P. XXXVII.

*Singularities of the Tartar language; the great variety of terms in this tongue; four different ways of writing it; the Tartar characters legible in every direction.*

THE Tartar language compared with the French, has this particular, that if, for example, they use the verb *faire*, it must be changed almost as often as the substantive that follows it. They say *faire un maison, faire un ouvrage, des vers, faire un tableau, un statue, faire un personage, faire le modeste, faire croire, &c.* This phrasiology is commodious, and burdens not the memory; but it is what the Tartars cannot bear, since they have different verbs as often as the substantives governed by the verb *faire* are different from each other; and when one fails of this, it is pardoned in common conversation; but never in a set discourse, or even in common writing.

The return of the same word in the compass of two lines is insupportable; and to their ears produces such a monotony, as is contrary to the harmony of style; wherefore they are apt to laugh when

when they hear a French book read, on account of the frequent repetition of the words, *que, qu'ils, qu'eux, quand, qu'on, quoi, quelque fois, &c.* The frequent repetition of these pronouns displeases them greatly; and it is in vain to tell them, such is the genius of the French tongue, to which they cannot accustom themselves. The Tartars avoid this very carefully, since the position of terms alone supplies its place among them, without ever producing ambiguities, equivocations, a jingle of words, or unnatural allusions.

Another singularity in the Tartar language is the vast quantity of terms, which it has abbreviated; for it never needs those periphrases, or circumlocutions, which lengthen out a discourse, since short nervous words express with clearness what without their means could not be expressed but by a multiplicity of sounds, as is easily observed in their speaking of domestic or wild animals, of terrestrial or aquatic fools. When we want to give an exact description in our language, how many periphrases must we necessarily use for want of terms proper to signify what we mean. But it is not thus among the Tartars, as will be obvious from the example of a dog, which, of all domestic animals, has the fewest terms in their language, which however abounds with a great many more than ours. Besides the common appellations of great and little dogs, of mastiffs, grey-hounds, spaniels, &c. they have some words which denote their age, their hair, and their good or bad qualities. Thus would you say, a dog has the hair of his ears and his tail very long and thick, the word *taiha* supplies all; and if a dog has his snout thick and long, with hanging lips, the single word *yolo* expresses the whole. If this dog should couple with an ordinary bitch, which has none of these qualities, the  
whelp



whelp is called *peferi*. If any dog or bitch has above the eye-brows two tufts of white or yellow hair, we need only say *tourbe*; and if he is marked like a leopard, it is *couri*. If he has only the snout marked, and the rest of an uniform colour, then he is called *palta*. If he has some hairs upon his head falling backwards, he is called *kalia*. If his eye is half white and half blue, he is then called *tchikiri*. If he is of a low size, the legs short, the body thick, the head upright, he is then *capari*, &c. *Indagon* is the general name of a dog; *nieguen* that of a bitch. The young are called *niha* till seven months old; after that, to eleven months *nouquere*; and at sixteen months they take the generical name of *indagon*. The same is observed in regard to their good and bad qualities, two or three of which are expressed by one word.

It would be tedious to speak of other animals, and especially of horses, since the Tartars, from their great regard to this animal, so useful to them, have multiplied names in his favour, to such a degree, as to give him twenty times more than the dog. They have not only proper words for his different colours, his age and qualities, but also for his several dispositions; whether, when tied to a place he cannot stand still; whether he gets loose of himself, runs wildly about, and is fond of being in company with other horses; whether he is frightened at the fall of his rider, or the sudden appearance of a wild beast; or when he is mounted, how many paces he is master of, and how many different jolts he gives his rider. For all these, and many other qualities, the Tartars have appropriated particular terms.

Whether this variety of words is good, bad, or useless, we shall not pretend to determine; it is cer-

certain, that if it loads the memory of those who learn it, it is a great advantage to them in conversation, and is absolutely necessary in composition, since without this multiplicity of names for all the external and internal parts of animals, we could never translate any of their books which describe them.

As for [what remains, the Tartar language wants none of the terms necessary for the description of the human body ; but it seems not easy to guess from what neighbours they could have borrowed them. They have to the west the Mogul-Tartars ; and in these two languages there are not above seven or eight similar words ; neither can it be said from whom these names originally came. To the east there are found certain little nations near the sea, who live as savages, and whose language they as little understand as they do the language of the northern people. To the south they have the Coreans, whose tongue and alphabet, which are Chinese, have no affinity with the language or characters of the Tartars.

After the conquest of the Chinese empire, the Mantcheou Tartars were afraid lest their language should be impoverished, or rather entirely lost by the oblivion of their terms, and the mixture of the Chinese language with their own ; for these two tongues are incapable of being united. The old Tartars died by degrees in China, and their children learned more easily the language of the conquered country than that of their fathers, because the mothers and domestics were almost all Chinese. To remedy this inconveniency, under the first emperor Chuntchi, who reigned but eighteen years and some months, they began to translate the classical books of China, and make dictionaries of words ranged alphabetically : but as these expli-

cations

cations and characters were not Chinese, and the Chinese language could not express the sounds and words of the Tartar tongue, this labour was very useless.

It was for this reason that the emperor Canghi, in the beginning of his reign, erected a college, or society of the most skilful men in the two languages of Tartary and China, ordered some to translate the history and classical books, which are not finished, and others to translate pieces of eloquence; and the greatest to compose a dictionary of the Tartar language.

Tho' the Tartars have but one kind of characters, yet they write them four ways, the first of which is that resembling such as are grav'd on wood or stone; and as this is the most respectful manner of writing, the books presented to the emperor, are all done in this manner; so that the person employed in this work cannot write above twenty or twenty-five lines a day; and if any application of the pencil, by too heavy a hand, forms a stroke thicker or broader than it should be; if, by the defect of the paper, it is not clean, if the words be too close, or at unequal distances, or if any one of them is left out, in such a case the writer must begin again. It is not permitted to use references, nor supply the defects in the margin, neither is it allowable to begin a line by a syllable, which could not be contained in the foregoing; for which reason, writers must be very cautious, and careful to measure their space, that these inconveniencies may never happen.

The second manner of their writing, tho' very beautiful, and not very different from the former, is yet less troublesome. 'Tis not necessary to form with double strokes the final letters of each word, nor to re-touch such as are made, either because  
the

the stroke is fainter in one place than another, or because it is a little blotted.

The third manner of writing differs more from the second than the second from the first. This is their running hand, which is so expeditious, that the writer can soon fill with it, both sides of a leaf. As the pencil preserves the ink better than our pens, little time is lost by dipping it in the ink; so that when they dictate to an amanuensis, we see his pencil run on the paper with an incredible rapidity, without stopping a moment; and this is the usual character for writing the registers of tribunals, law-suits, and other proceedings; but tho' these three methods of writing are equally legible, yet some of them are less beautiful than others.

Tho' the fourth method is the coarsest of all; it is the shortest and most commodious for those who compose, or take down the minutes, or extracts of a book. In the Tartar writing there is always a principal line, which falls perpendicularly from the top of the word, to the bottom, and on the left of the line, they add like so many teeth of a saw, the vowels a, e, i, o, distinguished from each other by points placed on the right of this perpendicular. If they put a point opposite to a tooth, it is the vowel e; if they omit this, it is the vowel a; if they place a point to the left of the word near the tooth, this word stands for the letter n, and must be read ne; but if there was a point opposite to it on the right, you must read na. Besides, if on the right of the word there is instead of a point, an o, this is a sign that the vowel is aspirated, and must be read, ha, he, as in the Spanish.

Now a man who would express himself politely in the Tartar language, does not readily find the words he wants, but is perplexed and uneasy, and

When once he is brought to a good humour, and wants to commit his thoughts to paper, if possible, without writing them, he then forms the head of the character, and draws the perpendicular to the bottom; and it is much if he puts one or two points, but continues thus, till he has expressed his thought. If another thought comes into his head, he does not give himself the trouble of reading over what he has written, till he comes to a difficult transition, in which case, he stops short, examines his perpendiculars, and adds some strokes in the places, where none but himself could guess at his meaning.

If in reading he perceives that he has omitted a word, he adds it on the margin, making a mark, where it ought to be inserted; but if there is a word too much, or ill placed, he does not erase it, but incloses it with a large dash: in a word, if he observes that the word is good, or is told so by others, he adds on each side two oo, which denotes to the reader, that such a word stands. This last manner of writing is legible, especially when we are well acquainted with the subject, and are habituated to the language.

Tho' they commonly use a pencil for writing, there are Tartars who use a kind of bamboo, cut very like an European pen: but because the Chinese paper is without alum, and very thin, a Chinese pencil is more commodious than a pen. Yet if they write with a pen, or make use of one to paint in the Chinese fashion, flowers, trees, or mountains, they must first moisten the paper with water wherein is dissolved a little alum, to hinder the ink from sinking.

A remark not to be omitted is, that the Tartar characters are of such a nature, that one may equally read them inverted, that is to say, that if

a Tartar present you a book open, in the common position, and if you read it slowly, he who only sees the inverted letters, will read quicker than you, and anticipate you, when you hesitate, whence it happens that it is impossible to write in the Tartar language so as to conceal what is written from those in the same room, especially if the characters are large.

We shall finish this chapter by some observations on the Tartar language. 1. They cannot join two consonants, whence it happens, that the Tartars cannot write the European languages; since instead of the French words *prendre*, *platine*, *grifon*, *friand*, they would write, *perendee*, *palatine*, *feriand*, *gerifon*, &c. because they are obliged to place a vowel betwixt two consonants.

2. Their alphabet is defective in this, that they want the two initial consonants *B* and *D*, for which reason, they cannot begin any Words with these letters, but are obliged to substitute the *P* or the *S*, so that instead of writing *bestia*, *dens*, they write *pestia*, *sens*. Whence it proceeds, that there are an infinity of European sounds, which they cannot write, tho' they can pronounce them.

3. They pronounce and write the vowel *e* always broad, and never use the *e* mute, but at the end of some words, which end in *n* : but they have no sign for this.

4. The Tartar language is very unfit for a concise and pointed stile, upon account of the redundance of long words, which makes it useless for poetry, because the elisions and rhyme are inconsistent with this language : thus none of the Tartars ever attempted to give us any other than prose translations of the Chinese poets.

In the Tartar language, there are few transitions, and those so delicate, and difficult to comprehend,

that they perplex the most sagacious. We sometimes see a Tartar hold his pencil a long time in the air, before he proceeds from one sentence to another ; and after having paused, he is obliged to blot out what he has written ; when they are asked the reason, they give none but this ; that sounds ill, that is harsh, this is not current language, there is need of another connexion, &c. but what proves that these transitions are but few in this language is, that those who are not perfectly masters of it, generally lengthen the final letters, by adding the word *yala*, which signifies nothing. If in a conversation they only repeat this word, once or twice, they think they ought to be esteemed for it. But in a composition of an elegant nature, the Tartars dare not use it, especially since the emperor has disapproved of it ; but the authors, who would avoid it, find themselves puzzled, when they are to pass from one subject to another.

### C H A P. XXXVIII.

*Of the province of Sirvan, or antient Albania ; the extent of this province ; fertility of the soil, the fruits, plants and flowers, which grow there ; the particular manner of cultivating the lands, and getting in their harvest ; description of Chamake, Derbent and Bakou.*

THE province which at this day is called Sirvan, is the ancient Albania, bounded on the north by mount Caucasus, now called the King's mount ; on the east by the Caspian sea ; on the south

south by the river of Cyrus, above its union with the Araxes, and by a river, which disembogues itself into the Cyrus, called by ancient geographers Azaron, on that side of Sirvan which borders on Georgia. It is about thirty leagues from north to south, as broad from east to west, and contains but three cities, Chamake, Derbent, and Bakou; the rest are but villages, of which there are about sixty inhabited by Armenians.

Strabo, Pliny, and Ptolomy agree that Albania is situated betwixt mount Caucasus, the Caspian sea, and the river Cyrus, and these boundaries have not been changed since their time; but they do not agree in other particulars.

Ptolomy supposes a great distance betwixt the mouths of Cyrus and Araxes. Plutarch in the life of Pompey is uncertain, whether these two rivers fall into the sea by the same mouth, or whether they do not fall separately, near to each other. Pliny says, that according to the most common opinion, Cyrus carries with it the Araxes, twenty leagues before it falls into the sea; and it is true that the Araxes loses its name, about twenty leagues from the sea.

According to Pliny, Albania was watered with several rivers, which disembogued into the Caspian sea, among others, with the Cyrus, Cambyses, Albanus, Casius, and Gernus, the four last of which are not to be found at present, unless they are reduc'd to rivulets.

The Pirsahade is the only river in Sirvan, runs above Chamake, and has a large channel which is only fill'd by the melting of the snow. This river has been divided into three branches, one of which flowed near the city garden, tho' all three furnish'd but a little water.



Ptolomy reckons up a great number of cities in Albania, and in the province of Capulaca, which Pliny thinks was the capital, and gave its name to the province.

But we must say of those cities what Ptolomy said of the rivers; for if these cities ever subsisted, they are now no more.

Strabo appears more to be believ'd than Pliny, when he says that the Asiatic Albanians liv'd in the manner of the Nomades, without towns or fix'd habitations, employing themselves solely in breeding and feeding cattle.

Sirvan is a province of Persia, of which Chamae is the capital, and the residence of the kan, the Persian name for a governor. Derbent and Bakou are two small separate states, under princes stil'd sultans, who are vassals of the king of Persia. Derbent shuts up the entry of Albania on the north, takes up about a league from Caucasus to the sea, and is probably what Ptolomy calls the gates of Albania. Strabo talks of a wall built near this place to prevent the irruption of savage people who liv'd beyond it, and this long wall, where ruins are yet seen on the mountain, and which the inhabitants say reach'd the Euxin sea, may have been what Ptolomy calls the gates of Albania.

The inhabitants boast of having Alexander for the founder of their city, and maintain that this is the Alexandria which that conqueror built near Caucasus. Quintus Curtius and Arrian report, that the Macedonians, to flatter Alexander, took away the name Caucasus from the Scythians, and that Alexander near this mountain built a city, to which he gave his own name.

But it is certain Alexander never enter'd Albania, which was cover'd by that part of Media  
which

which Atropatos preserv'd from his rapid conquests. Atropatos was a lieutenant of Darius, and that part of Media which he preserv'd was call'd Atropatenian Media, of which he always continu'd master, and in the time of Strabo, his successors were still in possession of it. This part of Media is what is called at this day Guylan.

Derbent is situated on the declivity of the mountain, and defended by a castle built a little above it, where the sultan resides. The plain down to the sea retains the name of the Grecian city, and we only see a few ruins in the plow'd lands.

It is also observ'd, that Derbent is not what was called the gates of Caucasus, which according to Pliny were opposite to Harmastis, the capital of Iberia. These gates were a great work of nature, for we see, says Pliny, the mountains naturally separated to form a passage betwixt them, but the people who inhabit on this side the passage, dreading the irruptions of a numerous people who liv'd beyond it, clos'd this entrance with bars of iron as thick as beams, under which flow'd the river Yrodonis. Not content with this defence, they built upon the rock a castle call'd Camania, which secur'd them from their enemies.

Strabo, who exactly describes four ways of entering into Iberia, says nothing that seems to have the least relation with these memorable gates, but perhaps they were not made in his time. Towards the north, adds he, and on the side of the Nomades, three days are requisite to ascend the mountain, and then descend into a narrow passage where the river Aragus flows. The extremities of this passage are fortified with a good wall on the side of Albania, and there is a way formerly cut out of the rock, and a marsh to be passed on the side of Armenia. This is a neck or strait,

where the Araxegus falls into the Cyrus. Above the junction of these rivers, and upon the mountains, are the cities of Harmozica, Saumara, or Subamara; the first near the Cyrus, and the other near the Aragus. It was thro' this passage that Pompey, and afterwards Canidus, passed into Iberia.

Bakou is fifteen leagues above the mouth of the Cyrus, upon the shore of the Caspian sea, to which this gives its name; for it is often called the sea of Bakou.

The adjacent country is of a light soil, and abounding with saffron, but its principal riches consist in its mines, which are wells, from which they draw naphtha in such abundance, and with so much profit, that they assure us, the king's revenues from it, amount yearly to ten thousand to-mans, or six hundred thousand abassis; each abassis is worth about twenty pence, and each toman about four pounds.

The naphtha, which is a kind of oil, rises with the water, from which they separate it, and draw it off by pipes; there is a black and a white species of it, and the latter being esteem'd the best and properest for sale, is transported to foreign countries, whereas the former is consumed at home in such plenty, that they burn it in lamps, and put wicks into it as thick as the thumb.

Sirvan agrees with the elogium Strabo gives of Albania; for the air is wholesome and temperate. The neighbouring mountains covered with snow, and the sea breezes, moderate the heat; besides, the whole country is unequal and mountainous, which contributes to keep the air in motion, and consequently to purify and cool it. The winters are commonly more moist than cold, and the snows which fall there do not lye long on the ground.

Fine weather, rain, and snow have their regular seasons according to the necessities of the climate; so that if all the years be not equally plentiful, none are absolutely barren, or insufficient to support the inhabitants, who often neglect part of their harvest.

The lands are so good that they have no need of manuring, but are only left fallow for a year or two, and in spring they give them the first opening. The husbandman always puts in the plough five pair of oxen, whose yoke is as long again as those of Europe, but of lighter wood. The labourer sits upon the yoke of the two first oxen, and regulates their motions. The plough has but one small side wheel, and the plough share enters no further than is necessary to turn up the clods fill'd with the roots of grass and weeds, which have sprung up during its lying fallow. These clods remain all summer thus expos'd to the rays of the sun, which reduce them to a very light earth.

The second ploughing is in autumn, in which they likewise employ five pair of oxen, with this difference, that each pair draws a particular plough, and these five ploughs make five furrows, which perpendicularly cut those made in the spring. The ploughs are follow'd by a man, who sows the seed mix'd with earth, that too much of it may not fall in one place; and at the time of the harvest the reapers cover their bodies with sheepskins, to save themselves from the stings of gnats. Without stooping they cut the straw about a foot beneath the ears, which they carry away on a sledge, and tread out the corn with horses; but the fifth part of the corn is for the owner of the land, and the rest for the husbandman. This corn is very beautiful, and makes fine bread, tho' they use no sieves, nor separate the bran from the corn.

The

The great quantity of straw which remains on the ground after harvest is not useless, since they either cut it at the end of autumn for fuel, or for food for their cattle, or else set fire to it to burn the rats, which are so very numerous, and cause such a ravage, that without the plentiful rains which regularly fall, they would be oblig'd to abandon their country.

A part of the tillage is manag'd by a kind of Tartars call'd Turquemis, because they are of the Turkish sect. They live in tents, which they erect in the winter in the plains, and in summer on the tops of the mountains. The greatest part of the inhabitants of this province were formerly transported to the other extremity of Persia, which lies in the mountains betwixt Belk-kaboul, and Candahar, where they have preserved their ancient name, and are call'd with very little change, Akvans. But the savageness of the place has perverted their natures; for they are become robbers, and are formidable to the caravans which travel into the Indies.

The vines, without cultivation, bear excellent grapes, of which they might make excellent wines did they not at the vintage mix them with about a tenth part of water. The black grape is of two kinds, the one very little, the other very large; the white is without stones, and has the relish of muscatel. There is not in all Sirvan either a vault or cellar, so that they bury their vessels in the garden or court, draw their wine as they do water, and when a vessel is empty, they content themselves with washing it, without removing it from its place.

The fruit-trees, which are of all kinds, grow promiscuously in the mountains and forests as well as in the plains, and their fruit is as good as can  
be

be expected from uncultivated trees ; for the inhabitants of Sirvan are ignorant of the art of grafting and inoculating. They have almost all the fruits found in Europe ; but the wood used by carpenters, and for fuel, is only to be had in the mountains, from whence they are obliged to bring it.

Pulses are here very plentiful, as well as fruits ; there are melons, cucumbers, asparagus, and, in general, all kitchen herbs and roots found in Europe ; but it seems as if nature designed Sirvan for the saffron country, especially about Bakou, where the soil is extremely light. They do not sell saffron pure, but mix it in a pan with a little wax, and then cut it out in small cakes.

All the country is covered with odoriferous herbs, such as thyme, marjoram, balm with yellow flowers, from which they draw an excellent cordial.

Among those different plants, there is a remarkable one which grows on the sides of the mountain Pidrakou, about three quarters of a league from Chamake. Its stem is very high, and as thick as a man's leg ; it spreads at the top, as wide as a small wind-mill, and diffuses a very agreeable smell, but dries up in autumn, and revives in the spring.

The fields are adorned with a thousand flowers, and their tulips are very fine ; some being yellow and small, and others red and large, which have a black yellow ground ; and if these colours were mixed in the leaves, it would be the finest flower in the world. It is seen every where, not only in tilled or corn fields, but even in the high-ways ; and rose and caper trees grow spontaneously in the forests, and among the cops.

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The lands which are untilled, nourish innumerable herds of cattle and flocks of sheep. Oxen are made use there for carriages, and bear the burdens on their backs.

They have two different methods in Sirvan of managing horses. When the Tartars come there to trade, they let their horses feed at large in the plains, and these horses continue together like a flock of sheep, and will never quit each other. The Persians, on the contrary, take great care of theirs; for they always cover them with a thick cloth, both in summer and winter; and if they turn them out to graze, they tie them, or put a great clog to their feet. When the graze season is over, they only give them towards the evening a sack of straw cut small, with four or five handfuls of barley, yet these horses, with loads on their backs, will travel, without resting, twelve or fifteen long leagues in a day; and what is very commodious is, that ten or twelve loads of straw, and half a load of barley, will maintain two hundred horses two days march.

Besides domestic animals, the forests are full of wild boars, stags, foxes, and wolves. There is at Chamake a considerable trade in foxes skins for Astracan. Larks and quails are scarcer in Sirvan than in Europe; but as a recompence, partridges are very common, as well as bustards, heathcocks, and pheasants; and there are likewise geese, ducks, pigeons and cranes. Storks come there in summer to build their nests, and bring up their young, but soon after disappear.

When the winter becomes sharp, one may purchase four heathcocks for five pence, a bustard for five or six, and a live pheasant for ten pence; these birds thrusting their heads into the snow, and suffering themselves to be taken.

A country so happy, and which furnishes so liberally every thing which renders life commodious and agreeable, is inhabited by a poor miserable people, either because their natural laziness hinders them from profiting by the stores which nature offers them, or because they are impoverished by the excessive taxes laid upon them; for it is said that the king of Persia annually draws out of Sirvan two millions of abassis; the common food of the inhabitants is garden herbs and fruits. Their most delicate repasts consist of rice, sour curds and cheese. Their cloathing is coarse stuff like a cassock, under which they wear a loose shirt, and few of them have another for change, which makes them to be eaten up with vermin; but what is most astonishing is, that they suffer so patiently their bad company, that they never give themselves any trouble to be freed of them.

Their shoes are made of the skin of an ox's head, or the head of a wild boar, and rising pretty high on the foot, are tied with cords.

They are esteemed cheats and lyars; and it is said of them, that they are persuaded without a lye, no business can succeed; but in other respects they behave themselves tolerably.

There are three languages spoken in the country; the Turkish, which is the most common; the corrupt Persian, and the Armenian; all of which they learn, and speak these three languages without confusion.

In Sirvan the different nations are distinguished by the different head-dresses. As the Persians love the red turbant, they call them *kesel-baschi*, or red-caps; the Armenians *kara-baschi*, black-caps; and the Georgians, who have a very little bonnet, *baschi-achouk*, bare heads.

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Let us proceed to the description of Chamake, which was formerly no more than a fortress surrounded with a wall, with turrets here and there, of which there nothing remains now but a few ruins. The city is enlarged on the south-side, and extending over five or six little hills, is quite open, without walls or ditches, and composed of about seven thousand houses, some of which are built of stone, with earth instead of mortar; but the greatest part are only of earth and clay, tho' some have a raised roof, covered with boards, instead of slate or tile, and others have flat roofs. These are of one story, having the door and windows on the same side, and several houses have only the door to give them light; as these flat roofs are only of prepared earth, with a mixture of chopped straw, and laid about a foot thick on little posts or beams, they cannot stop the rains, if they continue any considerable time, but the whole house is deluged.

People of easy fortunes take the precaution of having a tin roof, and that the sun may not prejudice it, they smear it with naphtha.

There is not in all Chamake any public building worth notice, nor one fine mosque, and yet it is a town of great trade, and the storehouse of Muscovy and Persia. The Muscovites have a magazine there, and bring to it tin, copper, skins, furs, and other merchandizes from their country. The Persians and Indians there sell their stuffs, silks, and cottons, with embroidery in gold and silver, and variety of costly flowering and ornaments. The Tartars bring hither horses and slaves, and there is a market where several streets meet together, with shops on each side shaded from the sun.

As for the religions publicly exercised at Chamake they are almost of all sorts; mahometism is pre-

predominant, but is divided into two sects, viz. that of Jonis and Cahis, or Jehais; the one are followers of Omar, and the others of Ali, and they continually curse and detest each other.

The Jews have a synagogue, and the Indians a pagod, and these last, who are in number about two hundred, carry on the greatest trade, and are the richest merchants.

The Christians who inhabit the city are Armenians, and have not above two hundred houses, and the Muscovites have a chapel in their magazine. The priests of both these nations are dress'd in green, and have this in common, that they love wine excessively.

The governor of the city and all the province, has the title of kan, and the magistrate who is intrusted with the police and the administration of justice is called kalenter.

It rarely happens that Sirvan is expos'd to the calamities of war; for tho' it is at the extremity of Persia, its situation secures it; for mount Caucasus is a rampart which enemies cannot break thro'; notwithstanding which, the king of Persia, for the sake of peace from this quarter, gives a pension of thirty-five thousand abassis to the chamkal; for thus they call the prince of the Leshi, a Tartar nation who inhabit beyond the mountains in the Daguestan, whence they say that Leshus, first prince of Poland, came.

In this place, and all over Persia, they celebrate, during ten days, the memory of Ussain the son of Ali. In the nine first days we see little beggars, half naked, besmeer'd with black, and divided into companies, run up and down the city with drums, singing and bawling out with all their strength, Ussain! Ussain! On the tenth day they carry thro' the streets a child upon a kind

kind of bier, supported by twenty men. The bier is ornamented with rich stuffs and looking-glasses, which make them still more splendid. The child counterfeits death, that he may represent Ussain, and during the procession, trumpets, drums, and the shouts of the people, make a hideous noise. This burlesque ceremony is changed the following day into a battle, which is fought in the great market place of the city, which is above five hundred paces long, and one hundred and fifty broad.

The city is divided into two parties; the one called Leideris, and the other Clahmedautais, from the names of two brothers, formerly princes of Chamake. The combatants are armed with sticks of half a pike length, with slings, and even fire-arms, so that the battle never ends without bloodshed. The governors endeavour to stop this disorder; but they cannot curb the youth, who glory in signalizing themselves in this skirmish.

## C H A P. XXXIX.

*The loadstone used by the Chinese physicians; properties which they attribute to bellevedere; the Chinese camphire; manner of their extracting it from the tree, and preparing it; the qualities which they attribute to it.*

THEY successfully use the loadstone in China against all sudden, painful, and malignant tumors, since Chinese physicians look upon this remedy as admirable; because, as they judge, it attracts the venom, and destroys the evil in its origin. They take steel filings, that are made as fine  
as

as possible, and throw them into the strongest vinegar; they then mix both well together, and after three or four boilings, take out the steel, and spread it on the affected part, after which they take a large loadstone, and apply it often to the filings, which attract the hidden cause of the malady, and dissipate the malignity of the poison. How many doubts may be proposed concerning this remedy? Can the load-stone vivify the steel filings, as it does the needle? Can the steel filings prepared in this boiling liquor be more proper to be agitated by the load-stone? Can the acids of the vinegar with which it is impregnated, render it, by a new arrangement of its pores, better prepared for the motion given by the load-stone? After all, may it not happen, that the load-stone may have some virtue against the poison, which it never exerts, but conjointly with the filings impregnated with the acids of vinegar, which causes a particular impression on the affected part.

From the properties of the load-stone, let us pass to those which the Chinese attribute to the *bellevedere*. This plant, as the Chinese botanist says, grows in the end of March, or the beginning of April; its sprouts, when they are eight or nine inches high, assume the figure of a child's fist, when it is half closed; it extends afterwards, and pushes out an infinity of branches, ornamented with leaves like those of flax. These branches gradually become round as they cross each other, and are naturally disposed in the form of an agreeable pyramid. The same author adds, that the leaves of the *bellevedere*, while they are tender, have a juice of an agreeable taste; that they may be eaten in salad with vinegar, if you mix but some slices of ginger; that being prepared as other pot-herbs, and boiled with the meat, they give it a fine and delicate

cate taste; that when it is in all its beauty, its leaves become hard, but that then they find in its stalk and root a food that will supply the necessity of life in years of famine. When the plant, say they, is arrived at its natural height, they separate the principal stem, and draw from it a lixivium of ashes, which softens, purifies, and cleanses it from the skin and bark. After this steeping they expose it to the sun; and when it is dry, they boil and season it. As for the root, whose colour inclines to violet, they take off the skin in filaments, or shreds, which after being boiled, are eatable.

But what they principally seek is the white substance of the root, which they easily reduce to meal, of which they only take what remains in a paste at the bottom of the vessel, which they afterwards bake in little loaves or rolls. The botanist quotes the example of four mountaineers, who living generally on the leaves, stems, and roots of *belvedere*, which their country furnished in plenty, preserved themselves in perfect health to extreme old age.

Besides, this author advises, that to render the *belvedere* more plentiful and substantial, they should set fire to these mountains which are covered with it, sometimes in one place, and sometimes in another, because its own ashes enrich its plants, and give them a more nutritive juice.

He then proceeds to the medicinal virtues of this plant. The *belvedere*, says he, has no hurtful or malignant quality, is cold by nature, of a sweet taste, full of benign juice, frees from excessive internal heats, is diuretic, opens the urinary passages, and procures sleep; being toasted, reduced to a powder, and taken in a draught to about two drachms, it expells flatulencies of the abdomen, and is a wholesome remedy against all distempers

pers caused by excessive heats. In a word, the root of the plant reduced to ashes, dissolved in a little oil, and applied to the bite of serpents, and other venomous insects, deadens the poison, draws it out, and cures the wound. The Chinese physician has neither recourse to salts, acids, nor alkalis, whether intrinsical to the plant, or chemically extracted from it, but only relates plainly its effects, and leaves to skilful chemists to seek out and unravel the hidden causes of them.

If these effects be true, such discoveries, simple as they are, ought to induce our European chemists and physicians, to make different experiments, to convince themselves of the properties of this plant, which, perhaps, is only neglected, because we are ignorant of its virtues.

What we are about to relate of camphire, will not appear less amazing, or interesting, than what we have related of the *bellevedere*. We are persuaded in Europe, that this precious gum distils from the stem and branches of the tree, and is collected near the foot of it, where they take it up mixed with earth. The dictionary of arts takes it for a truth, that this gum distils from a tree. "They bring, says the author, camphire from China into Europe entirely crude, and in cakes; but as it has not passed the fire, it is reputed coarse, and is so in reality."

The extract of a Chinese book lately published, affords such discoveries on this subject as deserve attention; for the book has great authority, and was printed by the order and care of the emperor Changi, who has inserted in it his own reflections. They cite a great number of learned men, who have been the authors, or revisers of the work; and assure us, that the camphire brought from China, does not drop to the ground, as it happens in

other resinous trees, which for their own preservation only discharge what is too unctuous in their substance; and that it does not distil from the top of the tree to the bottom, by an incision which they made in it. They would use this art in China, if they could do it with success; for such incisions made in resinous trees are much used in that country. In the article preceding that which treats of camphire, it is related, that to lose nothing of the varnish, they always fix to the place of the tree, where the incision is made, a little tube, and to it a vessel, which prevents the mixture of dirt and foulness, and as much as possible, the evaporation of the distilling juice. In another article, where mention is made of the pine-tree, which furnishes a resin, to which they attribute great virtues, they speak of a method of incision, which perhaps is unknown in Europe. They dig the earth, says the author, round about an old pine-tree, and uncover one of its principal roots, in which they make an incision, from whence distils a spirituous juice; but they must take care, that during the operation, the place above the root be covered, that the light of the sun or moon never reach it; without doubt the design of this method is to extract from the pine a liquor which is naturally fluid, and will continue so.

But it is in a quite different manner that they extract camphire in China from the tree called te-hang; for they take, says the Chinese author, fresh branches from this tree, cut them into small parts, and steep them three days and nights in soft water. When they have been macerated in this manner, they throw them into a kettle where they are boiled, during which time, they perpetually stir them with a stick of willow-wood; and when they see that the particles of this juice adhere copiously to  
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the stick in form of a hoar-frost, they strain it off, taking care to throw away the lees, or sediment. Then this juice is gently pour'd into a new varnished earthen vessel, where they leave it for a night, and on the next day find the juice coagulated, and become a kind of mass.

In order to purify this first production, they use a copper bason, look for some old mud wall, of which they take a part, and reduce it to a very fine powder. They put this powder at the bottom of the bason, and upon this bed of earth they spread another of camphire, and thus dispose them alternately to the number four; and on the last, which is finely pulverized, they make a covering of the leaves of the plant called poho, or penny-royal. The copper bason being thus filled, is covered with another bason, and they take care that both are exactly closed; and that they may exactly fit each other, they secure them at the edges with a yellow earth, which unites them strongly together.

The bason being full of this mixture, they place it on the fire, which must be regular, equal, and neither too strong, nor too weak; but practice alone can teach the due proportion. We must take care that the earth which joins the basons, holds both close, and leaves no chink, for fear the spirituous parts should escape, which would ruin the whole operation. When they have given it a sufficient heat, they wait till the basons are cold, and then separating them, they find the camphire sublimed, and adhering to the cover.

If the operation is repeated two or three times, the camphire will come out in beautiful parcels. Whenever they chuse to make use of it in certain quantities, they put it betwixt two earthen vessels, the edges of which they bind round with several folds of wet paper, and keep this vessel over a moderate



derate and equal fire about an hour; then letting the vessel cool, the camphire is found in its perfection, and fit for use.

An European chemist who had fresh branches of the tehang tree, would certainly abridge these operations, with some advantage with regard to the quantity and purity of this gum. Perhaps also all the Chinese operations have their particular use, since they know how, in less time, and at a smaller expence, to sublime mercury; for instance, in two well luted crucibles, such as silver-smiths use in the fusion of silver.

At least, we cannot say truly, as is affirmed in the dictionary of arts, that the Chinese camphire is brought into Europe crude, without having passed thro' the fire, since we find that it is subjected to it several times, tho' it may happen, that the Chinese, to increase the quantity, and the profit from it, sell, or have sold it formerly to the European merchants in crude lumps; that is to say, after a slight boiling given to their mass, or mixture of earth and camphire, and the plant pennyroyal. The form of the camphire cakes imported from Holland, which, according to Mr. Lemery, resemble the cover of a pot, easily lays a foundation for such a suspicion.

Besides, this manner of extracting camphire from the inmost part of the tree, may be practised in all the seasons of the year; which never could be, was it extracted like other resins, which flow not but a short time. Besides, by shaking the camphire tree, it is less hurt than by extracting its juice by incisions, which are always prejudicial.

Whatever the camphire is, which is sold to the Europeans, it is certain, that in the shops of Pekin they sell some very cheap, which yet is well granulated,

nulated, sufficiently pure, very subtil, easily evaporated, and when inclosed in a double vessel may be preserved a long time. But the best Chinese camphire, in the opinion of the Chinese themselves, cannot be compared to the good camphire of Borneo.

Might not one procure at Canton a little plant of the camphire tree, and transport it to some of the French islands, where it might easily grow; and it may possibly happen, that there are some of them there, tho' not known.

'Tis said the Chinese camphire comes from Holland into France; so that, perhaps, the Dutch have found it in their own islands, or from other parts transported the trees, which bear that camphire, which they sell under the name of Chinese camphire; but it is more probable that the Chinese of Batavia buy it in China, and then sell it to the Dutch.

They had reason to say, in the dictionary of arts, that the Chinese camphire is extracted from a very high large tree, some of which, says the Chinese author, are found one hundred and three cubits high, and so thick, that twenty persons with extended arms, can hardly grasp them. There are some seen that are computed to be three hundred years old; and this wood, which is of service for the construction of houses and ships, is intermixed with beautiful veins, and several fine works are made of it.

This tree grows fast, and about its foot and larger roots, shoots forth suckers that are proper for transplantation. The old trunks emit sparks of fire, probably, because this wood, which is rotten, and full of worms, produces those false fires, which are the natural effects of the effusion of cam-

phorated spirits, which are inflammable by the least motion, when continued but a few moments. The flame is so subtle, and there is so little fear of its communicating itself, that the softest hairs are not set on fire by it, as is proved by the experiment of burning camphire in the spirits of wine in the closest places.

It now remains that we should speak of the virtues which the Chinese ascribe to camphire. Tho', says the same author, it is somewhat acrid and hot, yet it is so far from being hurtful and destructive, that it opens the several vessels of the body, serves to dissolve and carry off the phlegm of the intestines, dissipates the impurities of the blood, removes the inconveniencies arising from cold and humidity, appeases violent cholics, the colera morbus, and the pains of the heart and stomach. It cures tetters, the itch, and troublesome cutaneous disorders, and is successfully used in fastening loose teeth, and is so efficacious a remedy against worms, that it delivers those who are subject to them, and prevents that disorder in others.

All the low part of the tree impregnated with the substance of the camphire, has almost all its qualities, in a much inferior degree. This wood is of a moderately sharp taste, and may be used internally without any apprehension of its disordering the stomach or abdomen; and if there is any violent indisposition in these, it dries up the humours which cause it, or if there be a necessity of throwing them up at the mouth, this effect is produced without any violent efforts, by swallowing a pretty rich decoction of the powder of this wood, which also resolves indigestions after meals. Those who are troubled with acid eructations, ought to use a decoction of this wood in a rice-wine, which  
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is weaker than small beer. Fomentations of this wood remove obstinate troublesome sweatings of the feet.

Let us finish these observations with a very efficacious remedy used against a distemper of the eyes, which is very extraordinary, and far more common in China than in Europe, and which is called *nyctalopia*. This malady is such an affection of the eyes as causes persons to see well in the day, imperfectly in the evening, but nothing at all during the night. The accessions of this periodical distemper, which is thought incurable in Europe, come on at the approach of night. *Kimungyen* is the name which the Chinese give to this distemper, and the three letters which compose, in the Chinese language, this word, signify eyes subject to be darkened, like those of fowls. The Chinese imagine, that by comparing the disordered eyes of the patient to those of a fowl, which are darkened towards the evening, they have disclosed the mystery of this disorder, without reflecting, that this effect in fowls is as natural as the falling of the eye-lids in a person oppressed with sleep.

But the case is not the same in the *nyctalopia*, since the patient, tho' his eyes are open, sees nothing, but gropes about even in the places to which he is most accustomed, and perceives neither inflammation, heat, nor the least twitchings in his eyes: and if he be placed in the day-time in a dark place, with the least light he sees distinctly; but when the night comes on his disorder seizes him to such a degree, that if a taper be presented to him, he perceives no object enlightened in the room, not even the taper itself; and instead of a clear light, he perceives nothing but a large blackish globe,

globe, without any lustre. This imperfect sensation seems to indicate, that the membrane of the retina, become flaccid and obstructed, cannot, for want of its natural spring, feel the gentle impressions of the visual rays, and is only agitated by such as are very strong. If the eye is darkened gradually as the night approaches, it is not enlightened in the same manner, nor successively, which is a comfort to the patient; for he knows that the following day his sight will be good till sun-set. The following is the remedy which the Chinese physicians use against this disorder.

Take the liver of a sheep that has a black head, cut it with a knife made of bamboo, or hard wood; take out the nerves, pellicules, and filaments; then cover it with a leaf of water-lily, after having powdered it with a little good salt-petre. Then put all into a pot, and let it be slowly boiled; stir it often while it boils, having on your head a large linen covering, which hangs down to the ground, that the smoak which exhales from the liver in boiling may not be dissipated, and that you may receive the whole. This salutary steam rising up to your eyes, which must be kept open, will make the morbidic humour distil from them, and you will be cured. If you should use this remedy about noon you will find yourself in the evening perfectly relieved from this symptom; but some, to render the remedy more efficacious, advise the patient to eat a part of the liver thus prepared, and drink the broth of it; but others affirm, that this is not necessary; and that persons have been cured by tumigating themselves at leisure with the smoak of the sheep's liver while it was boiling; and that it was equally useless to regard the colour of the sheep, whether black or white.

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This is an easy, speedy, and efficacious remedy, whose virtue has been experienced by a great number of Chinese for a malady known in Europe, looked upon as incurable ; and should this remedy succeed in Europe, China must be judged to have made it a beneficial present.

## C H A P. XL.

*The Indians opinions about the transmigration of souls.*

**M**OST of the Indians believe the soul to be immortal, and some think that it is a particle of God himself ; but tho' the generality of them are persuaded of this immortality ; yet they only prove it by the metempsychosis or transmigration of souls into different bodies.

Not only the Indians beyond the Ganges, but the people of Aracan, Pegu, Siam, Camboya, Tonquin, Cochinchina, China, and Japan, are of the same opinion, and support it by the same reasonings as the other Indians do.

We even find in America some slight traces of the transmigration of souls ; but how can we account for the introduction of this senseless notion among a people, who were so long unknown to the rest of the world ? It is not equally surprising, that it should spread in Africa and Europe. The Egyptians may have taught it to the Africans, and Pythagoras, the head of the Italian sect, had established it in several nations, but particularly in the two Gauls, where the druids looked upon it as the basis and foundation of their religion ; and it even  
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entered their policy, since when their generals designed to inspire into their armies a contempt of death, they assured them that their souls would no sooner leave one body, than they would immediately enter another to actuate it.

This doctrine was taught in the infancy of Christianity by the Simonian heretics, and the Basilidians, the Valentinians, the Marcionites, the Gnostics, Manichæans, and even many Jews embraced this extravagant system; so that we read in the talmud, that the soul of Abel passed into the body of Seth, and afterwards into that of Moses.

Some imagine, that this doctrine was originally taught by the ancient Egyptians, and that from them it spread itself to the Indies, and over the rest of Asia. Others, on the contrary, ascribe the invention of it to the Indians, who afterwards communicated it to the Egyptians. Philostratus assures us, that Pythagoras was the inventor of this system; that he communicated it to the bramins, in a voyage which he made to the Indies; and that from thence it was imported into Egypt. According to the Indian chronology, several thousands of years are elapsed since this doctrine was in vogue there, but unluckily the chronology of these nations is filled with such incoherences, that no credit can be given to them; so that it is more probable, as several ancient authors have said in express terms, that it was from the Egyptians, rather than the Indians, that Pythagoras and Plato drew what they have written about the metempsychosis.

The Indians, as well as the Pythagoreans, understand by the metempsychosis, the passage of a soul through several different bodies, which it successively animates, to produce those operations which are proper to it. At first they only spoke  
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of the passage of souls into different human bodies, but afterwards enlarged their system, and the Indians have still improved upon the disciples of Pythagoras and Plato.

1st, The Pythagoreans in establishing their system, founded their principal proof on the authority of their master, whose words were to them such oracles, that it was not permitted them to entertain the least doubt about any thing that was advanced by this great philosopher. Our master has said it, would the Pythagoreans reply, in dispute ; and this answer supplied the place of all proofs.

This is just the answer of the Indians. Bruma, say they, is the chief of the three gods worshipped in the Indies ; it was he who taught this celestial doctrine ; it is therefore infallible. It is Bruma, who is Abaden ; that is, who speaks essentially conformable to truth, and all whose words are oracles. He has, add they, a perfect knowledge of what is past, present, and to come ; it is he who writes all the circumstances of the life of each man ; it is he who has taught all sciences ; and can we, after this, doubt of the reality of the metempsychosis, since it has been revealed by Bruma ?

2dly, The disciples of Pythagoras were to keep silence for a certain number of years, before they were allowed to propose their doubts ; after which they were permitted to make their objections. Some of his disciples having asked of him, if he remembered to have existed before, he answered them, that he had appeared in the world under the name of Etalides the son of Mercury ; and that afterwards he was born again in the person of Euphorbus, and finally killed at the siege of Troy by Menelaus ; that afterwards he was known by the name of



of Hermotimus ; that he afterwards was a fisherman in the island of Delos, and went by the name of Pyrrhus, but at that time was the individual Pythagoras.

The Indians, on their side, quote an infinity of changes in their gods, beginning with Bruma, who, they say, has appeared under a thousand different figures ; and the metamorphoses of Vichnou are almost as numerous. There is one which they are still in expectation of, which they call Kelki-vadarran ; that is to say, Vichnou turned to a horse ; and they mention many other changes, especially of Routren.

The worshippers of Vichnou pretend, that this god, by an heavenly light, inlightens some favourite souls of his votaries, and informs them of the different changes which have happened to them in the bodies which they have animated ; and the zealous worshippers of Routren affirm, that this god has revealed to several among them the several stages of being in which they were, in the various transmigrations of their souls.

3dly, The Indians and Pythagoreans have recourse to comparisons, that they may the more clearly explain their sentiments. The soul, say the Indians, is like a bird in a cage, and as a man in a house which he inhabits, takes care to repair the weakest parts, just so the soul of man is in the body, lodges in it, and endeavours to preserve it. Besides, as a man leaves his house when it is no longer habitable, and goes to another, so the soul leaves the body when some sickness or accident renders it incapable of being animated, and takes possession of another body. In a word, as a man goes out of his house when he pleases, and returns in the same manner, so there are great men, whose  
souls

souls have the privilege to separate from their bodies, and return again when they please, after having run thro' several parts of the universe.

We read in the life of Vieramarken, one of the most powerful kings of the Indies, that a prince begged of a goddess in a private temple, to teach him the mandiram ; that is, a prayer which has the virtue of separating the soul from the body, and making it return when it would ; he obtained this favour ; but by ill-luck the domestic who accompanied him, and stood at the door of the temple, over-heard the mandiram, learned it by heart, and resolved to use it at a favourable conjuncture.

As this prince entirely confided in his domestic, he communicated to him the favour he had received ; but took care, as he thought, that he should not know the mandiram. It happened that this prince often hid himself in a remote place, where he gave a loose to his soul ; but in the mean time he ordered his servant to watch carefully his body, till his soul was returned again. He then repeated to himself this mystical prayer, and his soul disengaging itself instantly from his body, flutter'd here and there, and afterwards returned. One day when the domestic stood centinel near his master's body, he took it into his head to repeat the same prayer, and his soul immediately separating from his body, entered into that of the prince. The first thing that this false prince did was to cut off the head of his first body, that his master might not re-animate it. Thus the prince's soul was reduced to the necessity of animating the body of a parrot, with which it returned to the palace.

We must not think it strange, that the Indians believe, that the great men among them have had the power of thus separating their souls from their  
bodies,

bodies, since Pliny relates in his natural history, that one Hermotimus had this wonderful secret, of quitting his body as often as he pleased ; that his soul thus separated, travelled into several countries, and returned to its body, that it might relate what passed in the remotest nations. Indeed Plutarch is not of Pliny's sentiments, but imagines that the soul of this Hermotimus was not really separated from his body, but that a genius was continually at his side to inform him of what passed elsewhere.

The third comparison which the Indians make is taken from a ship and pilot. The pilot, say they, is the governor of the ship, directs it as he pleases, conducts it into distant climates, surrounds islands, enters with it into rivers, and sails in it to all the sea ports in the world. If it be hurt in any part, he repairs it, and abandons it intirely when the planks beginning to rot, denounce an approaching shipwreck. It is thus that the soul acts in the body of man. It conducts it every where, is the cause of its voyages, leads it into towns, makes it ascend and descend, walk, or rest ; when it is sick, searches for remedies to cure it ; and never leaves it but when it is in such bad repair that it can no longer perform its functions.

4thly, In the books of the ancient Indians we find, that the souls are portions of the substance of God himself ; that this sovereign master diffuses himself thro' all the parts of the universe to animate them ; and it must be so, add they, because God alone can vivify and produce new beings. Imagine to yourself, say some of their bramins, several millions of vessels, some great, some small, some of a middle size, filled with water : imagine likewise that the sun shines perpendicularly upon them,

them, is it true that he impresses his image in each of them ; that a small sun is seen in each, or rather a collection of rays, which flow from the body of that resplendent star. This happens in our world ; the vessels are those different bodies, whose souls are emanations from God, as the rays in the vessels are from the sun. If they are asked, Whether they think, that in the dissolution of bodies, these souls cease to be, as the images of the sun subsist not in these vessels after they are broken, they answer, that as those rays which formed the images in the broken vessels, served to form other images in other vessels, so souls, when they are obliged to quit decaying bodies, animate again some others, that are more fresh and vigorous.

Others believe that God is an extremely subtile air ; that our souls are parts of the divine breath ; that when we die, this subtile breath which animated us, reunites itself to God, unless it stands in need of purification by several transmigrations, or metempsychoses ; that when these souls are thoroughly purged from all impurities, they obtain final happiness, which has five degrees, and is consummated by an identity with God.

This doctrine was taught by the disciples of Pythagoras, as well as Plato, and the followers of Origen, who had taken it from these two philosophers, as is evident from what Cicero puts into the mouth of Plato ; to wit, that the Italic philosophers did not doubt but the souls of men were derived from the substance of God himself.

It is true, however, that several passages in Plato, sufficiently prove that God created human souls, and afterwards united them with the stars, that they might there contemplate the ideas of all created beings ; and in this, Plato, the faithful scholar of Pythagoras, thought as his master.

The same doctrine is found in the writings of the Indians, especially in regard of the rajas, who constitute the chief class after that of the brahmins. There are many classes of the rajas subordinate to each other, which yet are confined to two principal ones. The first is that of those who are come from the sun; that is to say, their souls formerly inhabited the body of the sun, or according to others, were luminous parts of it. The same almost may be said of the second class of the rajas, who say they are come from the moon; and when they are asked, whence proceed the souls of the other classes, they answer that they come from the stars, a decisive proof of which, say they, is drawn from these streams of light, which appear in the night-time, when the air is inflamed; for they pretend that these are souls falling from the stars, or from Chorkam. The Indians believe that these souls which thus fall from heaven, happening to light on the grass, enter into the bodies of cows or sheep, which happen to be feeding, and then animate calves or lambs, and if this light should fall upon some fruit, which should be eaten by a pregnant woman, they say it is a soul going to animate the infant in its mother's belly.

In a word, the Indians, as well as the Platonics, affirm, that those souls, being disgusted with their former joys, and stimulated with the desire of animating material bodies, enter into them, and continue till they have sufficiently purified themselves, and deserve to return to the happy regions from whence they came; but that if they there contract new impurities, they are at last condemned to hell, from whence there is no return till almost an infinite series of ages has elapsed.

5thly, As for the rest, this passage of souls into bodies more or less perfect, as they have practised  
virtue

virtue or vice, is not done by chance; but strict order; and there are different degrees by which they mount, or descend, to their recompence or reward. This is what Plato, a faithful disciple of Pythagoras, explains in this manner: 1st, Should it be a soul which has had a great deal of perfection while it was united with God, and had discovered many truths while in this species of beatific vision, it enters into the body of a philosopher or a sage, whose highest pleasure is contemplation. 2dly, It animates that of a king or a great prince. 3dly, It passes into the body of a magistrate, or becomes the head of a great family. 4thly, It animates that of some physician. 5thly, It enters into the body of a man, whose business it is to take care of the worship due to the gods. 6thly, It passes into the body of a poet. 7thly, Into that of a logician. And finally, Into that of a tyrant.

According to the Indians, those souls which immediately descend from heaven, 1st, Enter into the bodies of their bramins, who are their wise men or philosophers. 2dly, Into those of kings or princes. 3dly, Into those of magistrates or intendants; and finally, into those of the lowest and meanest classes, from whence they may, nevertheless, ascend in proportion to their purification. On certain occasions, souls must pass, say they, a thousand times into different bodies, before they are reunited to the sun, where they become so many rays.

The Chaldeans pretend that souls have wings, which grow stronger, in proportion to their practice of virtue, and weaker as they immerse themselves into impurity and vice.

Plato also says, that when souls are not elevated to a higher degree when they change their abode, it

is because their wings are not strong enough. When the Platonics are asked, how long a time is required for souls to recover the vigour of their wings, impaired by vice, they say, that at least ten thousand years are necessary for great sinners ; but that for the good, who have lived in three states of innocence, it is enough that they undergo three thousand years.

The Indians attribute wings, even to the mountains ; which, say they, were formerly so insolent as to endeavour to cover and overwhelm cities. Devendiren pursued them, say they, with a sword of diamonds, and coming up with the body of the whole army of these mountains in their flight, cut off their wings, which has produced that chain of mountains, which divide the Indies into two parts. As for the other mountains separated from the main body, they fell here and there in the parts where we now see them, while those which fell in the sea, formed the islands observable in it. All these mountains, in their opinions, are animated ; and they suppose their children to be rocks, and even gods and goddesses.

6thly, According to Plato, souls, except those of some philosophers, are judged immediately after their separation from the body, to be either punished in hell, or rewarded in heaven ; but that, after a thousand years, they return to the earth, where they chuse a kind of life conformable to their inclinations, on which occasion it happens, that those which have animated human bodies in the preceding life, pass into those of beasts ; while the others, who have been in those beasts, at length animate human bodies.

But we are not to believe, that the choice, which these souls make, is fortuitous or indifferent with respect

respect to all kinds of beasts, since among all animals they make choice of such as have the greatest analogy with the conditions in which they were in a pre-existent state. Thus Orpheus chose the body of a swan, and the soul of Tamiris was lodged in a nightingale; that of Ajax in a lion; that of Agamemnon in an eagle; and that of Thersites in an ape.

The Indians are of Plato's opinion, with this difference, that they believe that souls enter into different bodies, by a fatality, which they call the *chankcharam*, or determination of Bruma, who takes care to write down all the adventures of this soul in the futures of that body which it is about to animate.

7thly, According to Plato and Pythagoras, souls also pass into trees, plants, and vegetables of every kind. This is also the doctrine of the Indians, as is obvious from the following fable told by them:

Chourpanaguey was sister to the giant Ravanen; she had a son whom she most tenderly loved: this youth, one day, went into the garden of a devotee, and happened to spoil some trees; the recluse was offended at it, and immediately transformed him into a tree called *almaram*. Chourpanaguey having begged the hermit to moderate his passion, he yielded, and consented, that when Vichnou transformed into Ramen, should come into the world, and cut a branch off this tree, the soul of the young man should fly up into the Chorkam, and never undergo any other transmigrations.

8thly, The disciples of Plato and Pythagoras never thought that souls pass into stones, and such-like inanimate substances.

The Indians are persuaded that souls actually animate stones, mountains, and rocks, of which the



lowing is an example. They relate, that there was near the Ganges, a devotee called Cavoudamon, whose life was extremely rigorous; that he had one of the most beautiful women in the world for his wife; that she had the misfortune to displease Devendiren, the supreme king of the deities of the Chorkam; that the hermit perceiving this, gnashed his teeth for anger, and immediately cursed them both; that his wife was forthwith transformed into a rock, where her soul was confined; but in length of time, that Ramen touching with his foot this rock, delivered by his power this unfortunate soul; and as she had expiated her crime by this transmigration, she took her flight immediately into Chorkam.

9thly, It will be asked, perhaps, if this passage of souls from body to body is instantaneous, or if there is an interval between the different animations? The Indians are divided in their opinions on this subject, since some think that souls continue near their bodies, and even in those places which contain the ashes of burnt carcasses, till they find others proper to receive them, while others think that human souls have the indulgence of coming and eating for several days of what is offered to them; and this is the most common opinion, so that they rejoice when they see ravens come and snatch away what they prepare for these souls. The common people, especially, are persuaded that the souls of the dead enter, for some days, into these ravens or crows, or at least return in bodies of the same figure, that after this they go into the Chorkam, if they have deserved it, or into hell, if their crimes deserve that punishment.

As for Plato, he assures us, that such souls as are thoroughly purified, return to heaven from whence

whence they first came; and that the souls of bad men are obliged to remain near the ashes or tombs of the dead, till they are permitted to enter into other bodies, and by that means expiate their crimes.

The ancient poets, who, for the most part, were Pythagoreans, believed, that souls, whether good or bad, accompanied, for some time, the carcasses. The commentator Servius, explaining these words of the third *Æneid*, *Animamque sepulchro condimus*, says, that the soul continues near the body, or ashes, as long as there are any visible remains. It was to hinder souls from going sooner into other places, that the Egyptians embalmed with so much care their dead relations. Myrrh, perfumes, and bandages of fine linen dipped in gum, made these carcasses as hard as if they had been composed of marble; for which reason they also built those stupendous pyramids, of which we read such surprising accounts.

The Indians allow not to human souls such a long continuance near their carcasses, since twelve or fifteen days with them are sufficient. After which a natural propensity inclines these souls to look out for other bodies, which may give them more pleasure than those which they first animated; and this continues till they have passed thorough several hundreds of transmigrations.

The cause of so many new births or regenerations is accounted for by the bramins in the following manner, who all agree, that Bruma writes on the heads of children, at their birth, the history of their future life; and that, afterwards, neither he, nor all the gods together, can efface it, or prevent its effects. But some pretend, that Bruma writes what he thinks proper; and by consequence, that

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it depends on his fancy whether a man should be happy or miserable, while others maintain, that he is not free to follow his own caprice ; and that what he writes on the heads of children must be conformable to their actions in a state of pre-existence.

This writing of Bruma is a thing so diverting that it deserves to be explained. The cranium has futures which enter into each other, and are formed almost like the teeth of a saw. All these teeth, according to the Indians, are so many hieroglyphics, which form the mystic writing of Bruma in the three principal futures. It is a loss, say they, that we cannot read these characters, nor comprehend their meaning, since by this we should know all the occurrences of a man's life.

This is the true system of the ancient bramins, who affirm, that every good action ought to be essentially recompenced, and every bad one necessarily punished, in consequence of which no innocent person can be punished, nor any vicious one rewarded. Virtue and vice are therefore the genuine causes of the diversity of conditions. This is the decree which none can resist, this is the fatal hand of Bruma ; and it is by explaining this principle, that they give a reason why some are happy, and others miserable in this world. If you have done good in a preceding life, then you will enjoy all manner of pleasures in this : but if you have committed crimes, you will be punished for them.

They call this fatality *chankaram*, which is a quality imprinted in the will, and precipitates us to do good or evil, according to the actions of a preceding life.

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When this principle is established, the bramins reason from it in the following manner. The God whom we adore is just, and therefore can commit no injustice; yet many we see are born lame, blind, ugly, poor, and unprovided of all the necessaries of life, who by consequence are very unhappy. They have not deserved so melancholy a situation at their birth, since they had not the use of liberty; their fate must then be ascribed to the sins which they have committed formerly, in a preceding existence. On the contrary, we see others born to kingdoms, respected, honoured, and supplied with every thing that can contribute to pleasure. By what action could they have deserved so agreeable a condition, if not by the virtues they practised in their pre-existent state? Thus all the various transmigrations derive their origin from the necessity of punishing vice, and rewarding virtue.

They are so effectually convinced, that all the events of this life depend on the good or evil people have done in another, that when they see a man raised to high dignity or riches, they doubt not, but that he has been an exact observer of virtue in another life; when another, on the contrary, leads a most miserable life, in poverty, and all the disgraces attendant on it, we need not be astonished at it, say they, he was a wicked man.

It was Plato who invented the river of oblivion, and affirmed, that the demon who presided over the return of souls to earth made them take a draught of it, so that they forget every thing that had happened to them in their preceding existences. He added, however, that the forgetting of what passed in another life, was not always so universal, or profound, but that some few traces remain-

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ed of it, which being excited by objects, or the application to study, recalled the remembrance of a preceding existence. It is thus that he explains the manner in which the sciences are learned, and according to this principle he affirmed, that the sciences were rather reminiscences of what we had formerly known, than new acquisitions of knowledge. There were besides this certain privileged souls, who remembered the different bodies which they had animated, and all they had done in them. Thus Pythagoras perfectly remembered that he had been Euphorbus. But this was a singular favour, which was only granted to a small number of excellent and divine men.

The Indians advance something like this; for they affirm, that there are certain spiritual lights, which are communicated to some favoured souls, which make them remember all that they have ever seen or done. This privilege is particularly granted those who know certain mystic prayers, and repeat them: but the misfortune is, few know these prayers; and hence comes this ignorance of what we have formerly been or known. An example will better shew their opinion on this head.

It is said, in a book which they call Brummapuranam, that a king called Bimarichen, born in the kingdom of Tiradidejam, had married one Commatondi, who was a great princess, born in the kingdom of Hirreinehia-dejam. This king was very vicious, and did not observe the ajarams, or customs of his nation, which made him odious and contemptible to his subjects. The queen grieved to see him neglect the very things in which the Parias are very exact, reproached him severely; but the prince was so far from being offend-

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ed, that after having heard her patiently, he disclosed to her a great secret. The devotion I pay the gods, has obtained for me a favour which is reserved for few amongst mankind ; for they have discovered to me by a spiritual light which they have given me, that I was a dog in my former existence. I then entered by chance into a temple where they were performing a sacrifice ; and leaping upon the altar, swallowed up the rice which they were offering. They drove me out three times ; but I as often returning, they gave me such a confounded blow that I died upon the spot, before the door of the temple dedicated to Chiven. Luckily for me Chiven had descended into the temple to see the sacrifice, and regale himself with the steam. He was touched to see me die before him, and procured me a new birth in the person of that king whom I now am. If then, you see that I am so negligent of the ajarams, it is because my former inclinations are not quite destroyed, but I am still hurried on by my former propensities. This story greatly surprized the prince's ; and her natural curiosity prompted her to ask of her husband, with no little importunity, what she herself had been before. The king looking over old records, with the assistance of his spiritual light, told her, she had been pursued by a bird of prey, and devoured at the same time he was killed at the door of the temple ; and that this merciful God ordered she should be born again a rajatti. But what will become of us at last ? replied the queen. The king looking once more into futurity, discovered that he and she must live successively three stages of life in the class of the rajas.



